Aspects of Prosody

in

English and Swahili

J B Maghway

Ph D

University of Edinburgh

1988

Declaration

This thesis is in its entirety the result of my own work: in both the research fieldwork and data analysis, and composing and writing it. All references made to and examples borrowed from the literature have been acknowledged fully at every relevant point in the text. To my knowledge, it has not been and is not being presented for another degree or similar academic purpose. It has not been published, either as a whole or in part.

Acknowledgments

A thousand kilometre journey begins with the first step; I am grateful to all who assisted along the way. In particular, I wish to thank Jennifer for making the second and third stages possible. Special thanks are due to my Supervisor, Mr J A Kemp, for his immensely helpful guidance, constructive criticism and encouragement; my second Supervisor, Dr D R Ladd, whose inspiration led to the topic area, and whose suggestions and constructive and helpful criticism at every stage proved invaluable; Mrs E T Uldall for her constructive criticism and comments (I must also mention Mr J Christie, the third member of my Supervision Committee). To all the many others without whose support – material or moral – I would have been worse off: Christine and Derek, to name only two, I express my gratitude. Finally, I also thank the Association of Commonwealth Universities for their sponsorship; the following technical staff of the Edinburgh University Linguistics Department phonetics and computer laboratories: Norman Dryden, Stewart Smith, Irene McLeod and Cedric McMartin, for their generous readiness to facilitate my use of the Departmental computer, recording and other technical facilities.

ABSTRACT

The placement of nuclear and other accents is here studied in Swahili spontaneous conversational and monologue data. Findings therefrom are then compared with published recent findings for English. New reading intonation data for Swahili and native speaker and Tanzanian English is also presented, analysed and juxtaposed.

In Swahili, as in English, a whole utterance may be marked **[+focus]**, or some portion(s) may be marked *[+focus]* others **[–focus]**. In English (Gussenhoven (1983)), accents are assigned after each ***Argument, Predicate and Condition*** in the utterance has been marked [+focus] or [–focus]. The rightmost accent becomes the **nuclear accent**. Swahili, generally also locating the nuclear accent within [+focus], assigns accents through the ***subordination*** of accentual prominence in the intonation group. Unaccented syllables are subordinated to accented ones; minor accents to constituent accents; unstressed syllables to stressed. Of two or more constituent accents in an intonation group, one becomes the nuclear accent. The hierarchical structure of prominence subordination is in this study represented by *metrical tree structures* (Liberman & Prince 1977).

For the intonation group in English, only a monosyllabic nuclear word is obligatory, optionally preceded by Prehead and Head; optionally followed by Tail. In Swahili, a **nuclear word** minimally containing the **nuclear syllable** ***and*** a final syllable is obligatory. Optionally containing one or more prenuclear syllables, it may be preceded by one or more prenuclear words, and followed by a longer, optional tail. The locations of Swahili accents can be accounted for more satisfactorily not by **SAAR**, but by prominence subordination. Negative polarity focus is the only form of *minimal focus* capable of attracting the nuclear accent.

Three Swahili nuclear tone types are identified. The Fall may occur as a Simple Fall, Half Fall or Anticipated Fall. The Rise rarely ends below Mid. The Compound Tone may be realized as Rise Fall or Rise–plus–Fall.

The main intonational differences between English and Swahili are: (1) a **nuclear word** with at least two syllables is obligatory in a Swahili intonation group, as opposed to only a **nuclear monosyllable** in English; (2) Swahili **nuclear tones**, with the presence of constituent and minor accents in the same intonation group, do not auditorily stand out as prominently from their environments as do English ones; (3) Swahili nuclear tones are generally perceived as having ***narrower*** pitch ranges than English ones; (4) the Swahili data analysed lacked low rise and fall rise nuclear tones; (5) unlike English, Swahili does not leave long stretches of the intonation group unaccented and their pitches even FLATTENED to a monotone of level pitches.

There are three principal pedagogical implications for **Tanzanian** and similar learners of English. The **similarities** between English and Swahili should be fully exploited and special teaching emphasis rigorously placed on the areas of **contrast**. The contents of their tailormade basic course will, therefore, include: the roles of focus and prominence subordination in nuclear accent assignment; a nuclear tone inventory, including a fall rise and low rise tones; variation in number of accent domains per intonation group to permit flattening for *fluent* and *expressive* speech in English.

TABLE OF CONTENTS

CHAPTER 1

INTRODUCTION

1.1. Background and Motivation

Prosody, as used in the title and understood in the rest of the present study, does not assume everything in the wide scope given to it by writers like Crystal (1969:195). Its scope is here limited firstly to the *intonation* features of pitch, intensity and duration; secondly to *accent placement* and thirdly *pause*. As used here, therefore, 'prosody' covers part of the scope of what is also widely referred to as 'suprasegmentals' (Lehiste 1970).

Focus has often been associated with the location of the nuclear accents in utterances, for example by Quirk et al (1972), Halliday (1967), Gussenhoven (1983), in English and other Germanic languages. This study, in order to make comparisons between English and Swahili, attempts to examine the role of focus in the placement of accents in Swahili utterances. It finds that, while Gussenhoven's *focus-to-accent* approach accounts for English data successfully, it is ***prominence subordination*** which is more fruitful in the assignment of nuclear and other accents in Swahili.

New evidence is therefore adduced chiefly from spoken Swahili discourse. The findings are then compared with the findings for English as presented in recent literature. No fresh attempts are made to analyse intonation or the placement of nuclear accents in English data, with the exception of the analysis of the intonational features of reading texts, attempted for both English and Swahili in Chapter 4.

The ambitious, long term goal of the study is to make a contribution towards the evolution and development of a manual or coursebook for the teaching of

intonation and other linguistically significant basic prosodic phenomena of spoken English especially for Tanzanian, and other East African and similar learners of English as a Second or Foreign language. Various approaches and coursebooks based on them have been used over the years for the teaching of English intonation to those learners.

In recent years, the most widely used is Halliday (1970). However, both the learners and their teachers have generally found them not maximally effective or practical. That those courses are not so effective is clearly manifested in the low learner motivation and, consequently, low levels of acquisition and proficiency (the Ministry of Education in Tanzania has thus been compelled to take several steps, including the addition of two extra years – Secondary Forms V and VI – of learning English).

What appears to be commonly shared by such courses is that they aim to teach the learner of English as a Second or Foreign language the entire battery of intonational and other prosodic features which the linguistic theories of the authors of those courses have identified in the speech of native speakers.[1] But, as experience has shown, the inclusion in the course of every intonational or prosodic feature that the native speaker of English produces or recognises as linguistically and communicatively significant is not necessarily valuable for the Second or Foreigner language learner. If anything, an overloaded course that results would only mystify and discourage the learners.

The starting point of this study is therefore the recognition of the need for a more effective course tailormade for teaching the basic, essential aspects of English intonational and related prosodic phenomena to Tanzanian, East African and similar other Second or Foreign Language learners of English. The short-term and, understandably, limited objective of the present study is five-fold: (1) to survey, in recent literature, the findings for the role of focus (represented throughout this study by *italics* in accent placement in English; (2)

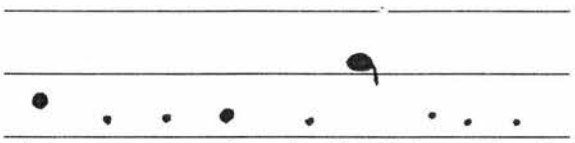
to study the role of focus in accent placement in Swahili; (3) to apply prominence subordination as a more fruitful method for accounting for the locations of nuclear and other accents; (4) to make a survey of the major nuclear accents in English and Swahili, and (5) to make comparisons between English and Swahili for (1), (2) and (3).

As one of its working assumptions, this study must undoubtedly take account of rises and falls in pitch (which every known text on intonation usually centres on). These constitute what is sometimes referred to as *intonational lexicon* (eg Gussenhoven 1984), consisting of an inventory of nuclear tones. But a prior and essential consideration concerns the parsing or chunking of utterances into intonational units, referred to variously as *tone group* (eg Halliday 1967, 1970, 1985), *intonation group* (Cruttenden 1986), *pause defined units* (Brown et al 1980), and such other terms as *intonational phrase, sense group,* etc. The criteria for segmenting utterances in this way are by no means easy or cut and dried. But we shall here assume Cruttenden's (1986:42f) view that such criteria may be internal or external. This is discussed further below.

One of the greatest prosodic difficulties faced by second language learners of English is their tendency to accent all or most of the stressed, accentable syllables in an utterance (see especially Chapter 4 for the particular case of reading intonation); where only some or one would be accented in the speech of a native speaker of English. The resulting speech is rather like strings of artificial utterances, made up of citation forms of words straight from the lexicon and totally unaffected by their phonetic, semantic or pragmatic contexts.

Even a cursory observation of native English speech would indicate that a given utterance containing any number of accentable words may have only the nuclear accent; the remainder being unaccented with the pitches totally *flattened* even to a monotone. A simple example is (1) (from a British

Television broadcast), which a journalist addressed to President Reagan after the American President's 1988 talks with Mr Mikhail Gorbachev in Moscow (the *interlinear tonetic transcription* used in (1) is explained in detail later).



(1) when are we going to MARS together?

Of the four lexical, accentable words (***when, going, mars, together***), only one – the nuclear word **MARS** – is made to stand out prominently from the rest by a pitch accent.[2] The others, with the exception of *going*, do not even bear a stress. Examples with even longer unaccented stretches whose pitches are levelled are easily encountered in everyday native English speech. This illustrates the phonetic realization of an extreme case of prominence subordination in English. Such cases show that prominence subordination in English can be much more noticeable than in Swahili since such levelling of pitch does not happen either in Tanzanian English or in Swahili speech.

It is therefore essential that accent placement have a prominent place in a tailormade course envisaged here. That would deal with the selection of what to accent and what not to accent, and how to determine the locations of the nuclear or 'sentence' accents on which the maximal pitch changes (ie nuclear tones in the intonational lexicon) are centred; and the domain in which such accents are assigned. At a later stage, the course would have to take account of refinements like incorporating the rhythm of English speech and the overall shifts of pitch levels over longer or shorter stretches of speech (ie the notions

of *key,* as postulated by Brazil (1975:4) and *register* (Cruttenden 1986:55, 129ff)). This generally points to a view of intonation and prosody not just as a tool of the lexico-syntax, but as a communicative and expressional instrument available to the speaker in interactive or non-interactive oral discourse.

The working assumption for this study and its ultimate goal, simply stated, would therefore be as follows. Certain basic or core elements in the intonational and associated prosodic phenomena in English can be postulated as essential for a basic intonation course for Tanzanian learners of English. Provisionally, it is suggested that these crucially essential elements include: (1) chunking speech into intonation groups,(2) the respective roles of focus and prominence subordination in the placement of nuclear and minor accents, (3) tone, and, at a later stage, (4) key and register.

1.2. Review of the literature

1.2.1. English

The literature on intonation and other prosodic phenomena, on some of which the current coursebooks used in Tanzania are based, will now be reviewed. We shall then proceed to a more in-depth examination of the essential elements stated earlier. The strategy is to examine these in English native speaker speech, as portrayed in the literature, and then to compare the published findings for English with the Swahili data produced by the learners. Learners' output of non-interactive data in English and Swahili will also be presented.

A basic course for our category of learner ought to begin with those aspects commonly shared by English and the language already known and used by the learners, in this case Swahili. This would then be followed by the introduction of prosodic aspects of English that the learners may find more exotic but which are nevertheless essential ingredients for effective communication

through the medium of spoken English.

It would, as already pointed out, be pointless to attempt to include in a basic course every intonational and prosodic aspect encountered in native English speech. These may feature in a specialist or advanced coursebook. In this way, the course would include the crux of the intonational and prosodic features of English. Consequently, it would not be counterproductive by recuding the learners' motivation as a result of overloading or overembellishing the course content.

Although we made a special reference to Halliday (due to his current importance in the Tanzanian context), he is of course only one in a long line of British intonation analysts. The more widely known among Halliday's forerunners include works such as Jones (1909), Palmer (1922), Kingdon (1958), and more recent ones including O'Connor and Arnold (1961), Albrow (1968), Crystal (1969).

For many of the analysts in the British tradition, an intonation contour is seen as a pitch configuration, or an overall tune, that covers the whole utterance or some stretch of it. This domain over which a given tune operates has been referred to as a *sense-group, breath-group, intonation group, intonational phrase, tone group*, etc.

In a given tone group, one of a finite number of intonation patterns is used as the tune. Each pattern is referred to as a *tone* or a *nuclear tone*, each of which consists of a definable pitch-movement or pitch-glide (or jump) upward or downward. This characteristic pattern of a tone group occurs at the *tonic* of the respective tone group. Such characteristic pitch patterns constitute the inventory of nuclear tones. We can characterize a nuclear tone, to borrow a musical metaphor, as the *cadence* of the tune or tone group.

Representation of nuclear tones may take one of several forms. The first is to

give them numeric reference values, such as Tone 1, Tone 2, etc., as in Palmer (1922), or Halliday (1967; 1970, 1985). The second way is to explicitly name the type of pitch-movement occurring at the tonic: for example, Fall, Rise, Fall-rise, Rise-fall, etc. The third method, which will be adopted here, is to use *tonetic interlinear* transcription, with dots and dashes or curves denoting pitch between two or three parallel lines generally above the text of the utterance. It is also possible for two or more of the above methods to be combined.

Palmer (1922) is essentially pedagogically oriented, with a series of systematic exercises for intonation practice. English speech is seen by him to be *cut up into Tone-Groups* (1922:7), each of which is defined as

> a word or series of words in connected speech containing one and only one maximum of prominence.

The stressed syllable of the word most prominent in the tone group is designated the *nucleus*. An inventory of tone group types and nuclear tone types is duly listed. Each of the four Tone group types - 1, 2, 3, and 4 - is associated with one of four nuclear tone types (2).

(2) Tone-group 1 - The Falling nucleus

Tone-group 2 - The High-rising nucleus

Tone-group 3 - The Falling-rising nucleus

Tone-group 4 - The Low-rising nucleus

Subsequent British intonation analyses have more or less adopted or at least assumed this broad approach. Over the years, modifications have resulted in widening variations in, for example, the number of tone group types and nuclear tone types.

In O'Connor and Arnold (1961), the inventory for English consists of six tunes (3). These, as can be seen below, do not include 'Level' (which occurs in some of the later inventories, such as Crystal (1969)).

(3) Low Fall
High Fall
Rise-Fall
Low Rise
High Rise
Fall-Rise

As in Palmer (1922), each *intonational phrase* or *sense group* is phonologically characterised by a pattern consisting of Nucleus, preceded by Head, and followed by Tail. But, for O'Connor and Arnold, it also has a Pre-Head - made up of any unstressed syllables occurring before Head. This analysis is illustrated below, using their own example sentences and analysis (4). In (4a), */t was an un* is Prehead (P); *usually* is Head (H), *dark* is Nucleus (N), and *night* is Tail (T). In (4b) */* is P; *want to be absolutely* is H; *sure* is nucleus, and *about it* is T.

(4) a. It was an unusually dark night.
P H N T

b. I want to be absolutely sure about it.

P H N T

The wide use of the Hallidayan model for teaching purposes in Tanzania has not unfortunately been matched by a high level of attainment, even at university level. Some Tanzanian teachers, in informal discussions, have gone as far as to suggest that a course such as Halliday (1970) is 'neither teachable to nor learnable by' their students. Their main argument is that the model, based on the RP accent of British English, does not take their students' specific circumstances and linguistic backgrounds into consideration (cf Brown et al 1980 for Scottish English).

The model suggested in Halliday (1967) and applied in the course (Halliday 1970) gives intonation a semi-autonomous status within the Hallidayan linguistic theory of systemic (sometimes also 'functional') grammar. His intonation model incorporates many of the concepts which the traditional British intonational literature has for years associated with English intonation. These concepts include *tone group, tonic, tone, nucleus, nuclear tone.*

What can be attributed to Halliday as his original contribution to the British tradition is the fact that, for the first time, such notions are brought together – in typical systemic fashion – to constitute a coherent systematic framework for the treatment of intonational phenomena, where the different components interact. Halliday postulates that British English (by which he really means RP) intonation is to be regarded as a 'set of phonological systems' (1967:29). The three systems, he suggests, are (1) *tonality,* (2) *tonicity,* and (3) *tone.*

Although also operating independently of one another, the three systems interact in the performance of a given utterance token (1967:113). Of the three

systems, the third is clearly nothing new - *tone* has been used widely by pre-Hallidayan analysts and writers. A brief resume' of tonality, tonicity and tone will put all three in perspective.

The system of tonality has to do with the chunking of an utterance into tone groups. The system of tonicity segments the tone group in two: the pretonic and tonic segments. It also locates the 'focal point' of the tone group within the tonic segment. If tonality demarcates the tone group boundaries, and tonicity identifies the focal or pivotal point of the tone group, the system of tone consists of options of pitch-movement types available for realizing each tonic. A more detailed survey of the Hallidayan model is to be found in Chapter 2.

The chief function of Halliday's tonicity is to determine the location of the tonic or, as we shall refer to it, the nuclear syllable.

The goal of determining tonic or nuclear prominence has also been the principal point of various other studies in the literature in recent years (eg Ladd 1983; Gussenhoven 1983, 1984, 1985; Bolinger 1985). Such writers, attributing nuclear prominence to pitch accent, therefore see the goal of their endeavours as being 'accent placement'. It is therefore not only proper but also imperative to review some of the more prominent ones among these before we go any further.

Four main approaches have been used in attempts aimed at determining the locations of nuclear or sentence accents in languages such as English. They are the *Nuclear Stress Rule* (NSR) approach, the *Direct (Semantic) Highlighting* (DSH) approach, and what we shall here term the *Focus-to-accent* (FTA) approach.

The NSR approach to accent placement is chiefly associated with Chomsky and Halle (1968) and the subsequent modifications of their approach. It can,

however, be traced as far back as, say, Newman (1946:176).

> when no expressive stress disturbs
> a sequence of heavy stresses, the
> last heavy stress in an intonation
> unit receives the nuclear heavy stress.

Its formalisation did not occur until Chomsky and Halle (1968). According to the NSR, sentence accent locations are predictable from the syntactic structure. This is formally stated as follows in (5).

$$(5)\quad V \longrightarrow [1\text{stress}] \;/\; [\#\#\ X\ [\ \underset{1\text{stress}}{\_\_\_\_\_}\ ]\ Y\ \#\#]$$

where Y contains no vowel
with the feature [1stress]

The syntactic connection in (5) is indicated by the sentence boundary markers ##. The nuclear stress rule, where the sentence stress or nuclear accent falls on the rightmost lexical word in the intonation group, has otherwise been referred to in the relevant intonational and linguistic literature as **normal stress**.

The main internal critics of the NSR were perhaps Bresnan (1971, 1972) and Schmerling (1974). While it succeeds in accounting for the placement of nuclear stress in single words or sentence accents in contextless or decontextualised sentences, the NSR often turns out to be counterintuitive for sentences within a discourse context. Bresnan therefore proposed the cyclic application condition on NSR, resulting in the rule's subsequent modification.

For a long time, the most outspoken and regular external critic of the NSR was

Bolinger (eg 1972, 1985 – to mention but two of his works). He has firmly stood against the NSR's position (including its subsequent modifications), maintaining that accent is meaningful wherever it occurs. The placement of accent is therefore to be explicable, in Bolinger's view, only with reference to semantics as opposed to syntax.

Bolinger has not only argued against giving to syntax the role which he considers belongs to semantics; he has also openly questioned the very notion that the distribution of nuclear or sentence accents can be *predicted* in any rule-governed fashion, by whatever means. Bolinger has maintained that, to successfully predict where the speaker will locate accents in utterances, one would need to have some psychological insight into the speaker's brain, to be able to predict his intentions (1972).

For Bolinger, accent locations are not predetermined by syntactic or any other rules. He argues that they depend upon the speaker's *free choice* of what to **highlight** and what not to highlight in any given utterance of a discourse. The term *accent* in these contexts refers in particular to the sentence accent or nuclear accent. Bolinger's position has widely come to be referred to as the *highlighting* or *semantic highlighting* approach to accent placement.

Bolinger insists that the speaker's freedom permits him to directly highlight with an accent a specific individual word in an utterance or sentence – a word which he thinks should be made prominent from its environment for the attention of the hearer. Individual words may be highlighted for the following reasons reasons. It may be due to their *power*. It may be due to the *interest* they generate in the discourse context. But a word may also be highlighted because of its greater degree of *informativeness* in the utterance or sentence.

Over the past decade or so, a body of literature has accumulated in support of a third approach to accent placement. Its evolution can be traced in the works

of such phonological analysts as Schmerling (1976), Bing (1980), Fuchs (1980), Ladd (1980, 1983), and Gussenhoven (1983, 1984, 1985). The most comprehensive statement so far not to mention defence and application of this approach is found in the work of Gussenhoven (especially 1983). It is therefore on Gussenhoven's position that we now focus our attention.

Gussenhoven (1983) is undoubtedly the most explicit statement of the third approach, referred to henceforth as *Focus-to-accent* (FTA). FTA argues very strongly against both the NSR and the DSH approaches. The two traditional approaches to accent placement are rejected by Gussenhoven on separate grounds. The NSR is out of favour because it attempts to account for the location of the nucleus or nuclear accent by the lexical-syntactic choices that the speaker has made (1983:374).

> [It] is rather as if phonologists were to try and predict the lexico-syntactic content of a sentence on the basis of a given intonation contour.

Bolinger's hypothesis of directly highlighting specific lexical items is rejected by FTA for not being rule-governed in any way, everything being left to the speaker's subjective free choice. In other words it is dismissed for suggesting pessimistically that accent placement rules are unformulatable. But FTA, of course, insists that they can be formulated and Gussenhoven proceeds to formulate them.

It must be pointed out that FTA's position - except for Gussenhoven's notion of expanded scope of focus - essentially resembles, and is clearly evolved from premises very similar to those of Brazil (1975, 1978, 1978a). In order to show the link between Gussenhoven's analysis and Brazil's, a brief resume' of the

latter is appropriate at this juncture.

In his analysis of discourse intonation in English, Brazil takes the traditional notion of *tone group* for granted, and within it the *nucleus* or *nuclear accent* He then postulates two sets of phonological **options** available to the speaker, as functional entities in the intonational and prosodic system of the language. The options are ***tone*** – which is nothing new – and ***key.*** Although tone and key are most clearly observable in interactive discourse, such as conversational speech, they also operate in other discourse types (monologues, etc.) and even citations of sentences in isolation.

The option of tone refers to the *pitch change* which realises the nucleus or nuclear tone, specifically, the tonic syllable, in the tone group. It contains three internal choices that the speaker has to make: the choice between what Brazil terms a *proclaiming* tone; a *referring* tone, and a *neutral* tone.

Each of the first two tone types consists, in turn, of an unmarked and a marked or intensified tonal choice. The proclaiming tone – represented by **p** – is realised by a Fall when it is unmarked, and by a Rise–fall – represented by **p+** – when marked or intensified. The referring tone, on the other hand, is realised by a Fall–rise when unmarked – represented by **r** ; when marked it is realised by a Rise – **r+**. The neutral tone– **n** – is realised by a Low–rise.

The second option, key – like tone, has the tone group as its domain. In Brazil's own terms, it is 'at least partly referrable to the [overall] pitch level of the tone group as a whole'. The choice of key, once again like tone, may be either neutral or marked. Marked key may be *equative* or *contrastive.* A marked equative key is realised by a Low overall pitch level of the tone group. A contrastive key is realised by a High tone group pitch level. Key is indicated by three columns labelled High, Mid and Low, with each tone group beginning on a new line in the appropriate key column.

The meanings of the choices may be summarised as follows. The choice of ***r*** – fall-rise tone – marks the 'matter of the tone group as part of the shared, already negotiated, common ground occupied by the participants at a particular moment in an on-going relationship'. This is clearly very closely related to Gussenhoven's notion of *background*. The choice of **p** signals the matter as 'new' (cf Gussenhoven's **Variable**). The co-selection of neutral key with either **r** or **p** means that the tone group has the 'simple function' signalled by either **r** or **p**.

The choice of a High key signals that the matter of the tone group is seen in the 'context of a closed set of options'. A co-selection of High with ***r*** implies that the speaker takes for granted the existence of such a closed set of options (an assumption that a potential contrast has already been established in the immediate context or exists in the commonly shared social context). If High and ***p*** co-occur, then the speaker's 'contribution to the common ground includes the imputation of a closed set of choices from which selection has to be made'. Some examples from Brazil (1975:37) to illustrate the choices the speaker has to make constantly between the options available to him are shown below in (6).

(6)

High	***Mid***	***Low***
r so I'd like to take – if I *might*		
	p these points in *turn*	
r and I *hope*		
p pretty *con*fident		
	p that I can *meet* them	
		p to a very large ex*tent*

An apt and fair comparison to Brazil's *key* is probably with the choice between *major* key and *minor* key in music. In prosody, key is that option which adds mood or *colour* to the tone selected from the inventory in the intonational lexicon. Key gives the selected tone a specific attitudinal or emotional texture, thus reflecting the speaker's operative personal or emotional involvement in the subject matter of the utterance in question. Therefore Brazil's choice of key signals whether the utterance was spoken with detachment – with the speaker giving an impersonal view, dissociating himself from the subject matter; or whether the utterance was delivered with emotional commitment, the speaker expressing a personal point view, opinion and feelings on the subject matter.

The general concept of *option,* as used by Brazil, is adopted by Gussenhoven (1983, etc.) so that his notions of *focus* and *background* are referred to as 'the speaker's communicative options'.

For Gussenhoven, the location of the nucleus or nuclear accent is merely a surface manifestation of focus distribution. Focus is not positively defined. But it is taken to be a semantic (like the DSH position) rather than a syntactic (unlike the NSR position) property of an utterance in its discourse context. Every utterance (sentence) must wholly or partly be marked as [+focus]. What is marked [+focus] is the semantic material that the speaker regards at that point of the discourse as his *contribution,* and is therefore regarded as the *Variable* (cf 'new information'). What is [–focus] is *background* (cf 'given').

For Gussenhoven (1983, 1984), the assignment of focus domains is one of the functions of SAAR (**Sentence Accent Assignment Rule**). This is explicitly stated in his own words as follows (1984:69).

> SAAR works in two stages.
> First the [+focus] language
> material is divided into

focus domains ...

His procedure is to assign [+focus] to every focused semantic constituent. Every [+focus] Argument, Predicate or Condition forms a focus domain of its own. However, since for Gussenhoven a focus domain is also an accent domain, and since in AP or PA sequences only the A is accented, any [+focus] Argument and Predicate sequences will consequently also constitute single joint AP or PA focus domains.

Accent placement only follows after focus domain formation, and therefore after focus distribution, or the assignment of [+focus] and [-focus] to portions of the utterance (hence **FTA**). The location of the nucleus or nuclear accent helps to signal that focus distribution to the hearer or addressee. The accent assignment rule (**SAAR**) operates in two stages. Since accents operate on focus domains, the first stage is *focus domain assignment* (DA). This is followed by accent assignment (AA) in (7b).

(7) a) DA: *P*(X)*A* ---> [P(X)A]

A(X)*P* ---> [A(X)P]

Y ---> [Y]

b) AA: [ ] ---> [*]

In AP/PA, accent A.

The first stage of the rule, DA, states that every [+focus] Argument, Predicate or Condition will constitute a separate focus domain. However, every stretch containing a sequence of [+focus] Predicate and Argument - with or without other linguistic material intervening - constitutes a single focus domain. The

second stage, AA, goes a step further. Each focus domain - [ ] - thus formed also becomes an accent (ie nuclear accent) domain - [*], with the proviso that wherever there is an Argument followed or preceded by a Predicate, the accent falls on the former.

1.2.2. Swahili

Intonation in Swahili has been the subject of several studies already. The earliest attempt is that by Tucker and Ashton (1942), consisting of very brief references to the subject. This was later followed up by Ashton (1944), using basically the same single person as subject and the same data as Tucker and Ashton. Ashton's (1944) analysis of Swahili intonation, following a British approach akin to Palmer (1922), identifies four *Tone Patterns* in Swahili.

Tone pattern 1 is said to be characterised by a high fall on the penultimate syllable, or a high tone on the penultimate syllable jumping to a low final syllable.

Tone pattern 2 is said to be used on questions that are formulated without change in the word-order of the corresponding statements or affirmations. It consists of (1944:24)

> a short stressed or
> slightly stressed penultimate
> syllable, followed by a long
> stressed final syllable, which
> generally has a high falling tone.

In light of the distinction we make (especially in Chapter 3) between *obligatory* and *optional* tails, Ashton's reference above to the *stressed* and *final* syllables as two separate reference points is of particular significance. It appears to

indicate that Ashton recognizes, as we do, the separate patterns that usually occur on the last two syllables of the nuclear word in Swahili.

Ashton suggests that her Tone pattern 3 is used in longer sentences and for listing. Because of the length of the sentence, 'suitable breaks' or pauses are introduced. However, to indicate that the sentence is not finished, the penultimate and final syllables have a "carry on" tone pattern (or our Reading Intonation in Chapter 4). The penultimate syllable is stressed and said on a high note; the final syllable remains on the same or is said on a higher note. The syllables preceding the penultimate will normally be on a mid-level or a rising scale.

Tone pattern 4 is described by Ashton as follows (1944:191):

> [it consists of] a stressed penultimate syllable on a high or high falling tone followed by a final stressed syllable on a low rising or low level tone. It is used to *direct attention to some particular word in a phrase or sentence* (cf Bolinger's ***highlighting,)*** and occurs frequently as an alternative to Tone pattern 3 *when extra antithesis or emphasis is required* (emphasis added).

In addition to the above four main Tone patterns, several other patterns are also proposed. They are: parenthetic, emphatic, and vocative. The main problem with this analysis of Swahili intonation is the impression it gives that the domain of intonational features in Swahili is somehow a single *word.* This impression comes from the repeated references to *stressed penultimate syllable* (which is the normal location of word stress).

Chronologically, the third study on Swahili intonation is Watkins (1958). Using two subjects, both non-native speakers and of dubious linguistic competence in Swahili (the author admits having had to undertake *revisions of the recorded versions ... with one of the subjects* to make the data more natural (1958:39)), Watkins was primarily interested in the segmental phonological structure of the language. Intonation is therefore included as a minor component of his study.

The approach used is an American structuralist levels analysis (Trager & Smith 1951). Watkins postulates four *junctures* and three *pitch levels.* The junctures are:

(8) (a) internal or plus juncture - /+/,

(b) terminal fading (cessative) - /#/,

(c) terminal sustained (anticipatory) - /l/,

(d) terminal rising (interrogative) - /ll/.

The pitch levels are: (i) high - /3/, (ii) normal - /2/, and (iii) low or zero - /1/. Watkins also identifies three stress levels. These are "weak or zero", "secondary" and "primary".

The fourth attempt at the analysis of Swahili intonation also uses an American structuralist levels analysis. Polome' (1967), like Watkins, was also interested in the general phonological structure of Swahili. But, unlike Watkins, he also includes syntax and other aspects of the language. The subjects are apparently Zanzibari, but their origin is nowhere explicitly divulged.

Clearly the most important work on Swahili intonation to emerge in the years up to the late sixties, Polome's analysis, also using the American levels approach, propounds three 'terminals' or 'terminal junctures' for Swahili. They

are:

(9) a) high/low,

b) mid/high-falling, and

c) high sustained.

Each of the three terminal junctures has two possible realizations. The 'high/low terminal' may be realized as either [¯ .] or [\ .]. The 'mid/high-falling terminal' is realized as [- \] or [/ .], while the 'sustained terminal' is realized as [¯·] (1967:52).

The 'high/low terminal' is said to occur in 'plain statements and orders', 'direct answers to questions without interrogative particle and in the second part of constrative sentence patterns', and in questions with interrogative particle'. The 'mid/high-falling terminal occurs in 'questions without interrogative particle'. The 'high sustained terminal' is 'strictly non-final', occurring 'only at major pauses in long utterances, especially sentences consisting of more than one clause' (1967:52-55).

The most recent analysis of Swahili intonation is Maw and Kelly (1975). It follows and relies upon the same data as Maw (1969). The approach used is a British one and has similarities with O'Connor and Arnold (1961) and, to some extent, Halliday (1967). Since Maw and Kelly's findings appear below in Chapter 3, where they are reviewed and discussed in the proximity of our own nuclear tones, we need not and shall not anticipate them here.

For our present purposes, the basic problems for Swahili intonation might perhaps be phrased as follows. Firstly, is there any such thing as a *nuclear* or *sentence* accent in spoken Swahili discourse? If so, how might its location

(and the placement and locations of other accents) be determined, characterised and accounted for? None of the previous studies reviewed above has attempted to deal with any of one these crucial questions. Secondly, if nuclear tones do exist, how they realized phonetically?

1.3. The present study

The above resume' of the literature on Swahili intonation is intended only as a background and context for the Swahili component of the present study. Intonation is here taken essentially to imply an intonation group consisting of an obligatory nuclear word, which may optionally be preceded by a prenuclear segment and followed by a tail. It is realized prosodically by an intonation pattern: an obligatory nuclear tone with optional prenuclear and postnuclear pitch patterns.

Swahili data generally responds to the DA or domain assignment component of the FTA approach (7). In conversational data, predictably enough, the nucleus is located in the [+focus] linguistic material. Focus after all, traditionally, has to do with *newness, emphasis,* and similar factors relating to the relative significance, relevance or importance of some or all of the linguistic material within the discourse context.

However, the AA stage of the rule, together with its AP/PA limitation does not always hold for interactive Swahili data. Formulated primarily to account for English and Dutch speech data, the two parts of the rule signal the location of the nuclear accent from the distribution or [+focus]. That is, given the focus distribution, we can predict the location of the nuclear accent. By Gussenhoven's account (1983:28), the 'last assigned accent' (ie the rightmost) is the nuclear accent. This is true for Swahili data only within a single constituent. As it will be seen later on in Chapter 2, the FTA rulesuccessfully predicts only the Swahili constituent accent.

It is therefore necessary to postulate a different means of accounting for the location of nuclear accents in Swahili. For this, the notion of **subordination of prominence** within accent domains and intonation groups is proposed. Prominence subordination, however, is not only relevant at that higher level alone. It operates at three levels: apart from the utterance level, its operation can also be demonstrated at word, and semantic constituent levels.

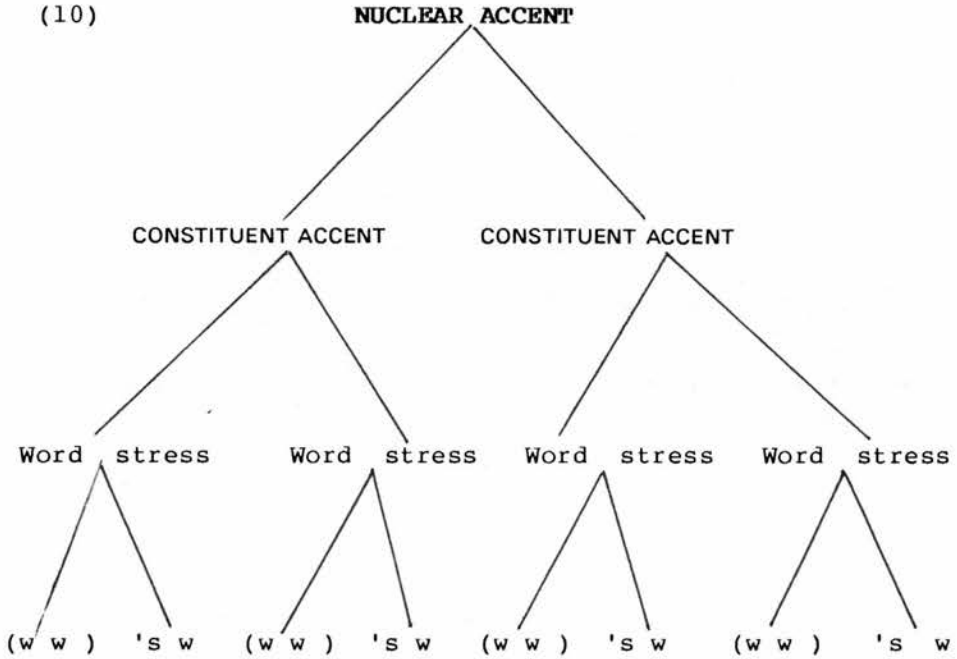
At word level, every Swahili word of two or more syllables has one and only one stress, usually on the penultimate syllable. The unstressed syllable(s), being weaker than the stressed, are consequently subordinated to the latter.

At the semantic constituent level, there is a subordination of one or more lexical-stresses to one prominence in that constituent. Lexical-stresses are therefore subordinated to the pitch prominence of the phrasal-stress, which becomes the *constituent accent*.

At the utterance level, constituent accents become subordinated to one pitch prominence within the whole utterance or intonation group - the *nuclear accent*. The nuclear accent will generally occur in a [+focus] semantic constituent.

The operation of prominence subordination at the different levels might be represented diagramatically somewhat as shown in the ad hoc tree structure below. When, apart from a constituent accent, a prominence is perceived in a constituent, it will be considered a 'word stress', or sometimes only a stress.

(10)



The representation in (10) above, and in many places in the subsequent Chapters, is based on and assumes the theory of metrical phonology (Liberman and Prince 1977). It is therefore proper that the most essential elements of that theory will now be summed up briefly.

Metrical trees are assigned to bisyllabic and polysyllabic words, and to longer stretches of language in order to determine the stress and rhythmic patterns of such words and stretches. In our use of metrical tree structures, rhythm is not part of the consideration. Every metrical tree assigns a binary relationship between the nodes of its descendants. Each node bears a *strong* (**s**) or *weak* (**w**) relation to its sister node. Tree construction follows principles generally similar to Chomsky and Halle's (1968) English Stress Rule assignment, assigning [**+stress**] or [**–stress**] on all syllables in a word or stretch of language, proceeding from right to left.

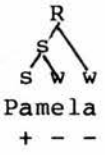
As a fundamental well-formedness constraint on metrical trees, (s) cannot

immediately dominate a syllable that is [-STRESS]. Where that constraint fails to determine which way to link two nodes, the right hand node is (s) if and only if it branches. Some examples of various tree structures are provided in (11) - (19); with the exception of the last two, all are from Liberman and Prince (1977).[3]

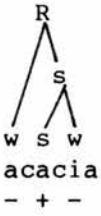
(11)

(12)

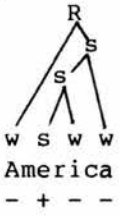
(13)



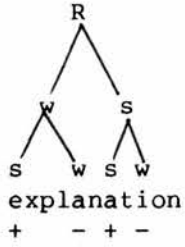
(14)



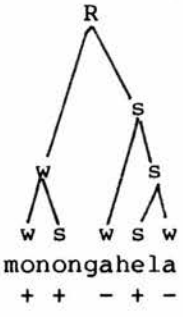
(15)



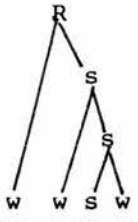
(16)



(17)



(18)



(19)

Rhythm constitutes an essential part of most studies on intonation or prosody. The rhythm of English speech has been characterised as *stress timed* by some

analysts (eg Abercrombie 1952, 1968). Stress timing, associated with the speech rhythms of English and generally other Germanic languages, is contrasted with *syllable timing* (associated mainly with most non-Germanic languages). Essentially, in a stress timed language, the rhythmic units – the so-called *feet* – are said to take equal lengths of time regardless of the number of syllables in each respective foot (cf Bolinger 1981, where the unit of rhythm is one syllable with a full vowel and any reduced vowels following it; so that what is rhythmic are sequences of full-vowel syllables and any subsequent reduced syllables). By contrast, syllable timing is said to depend upon the number of syllables in the stretch of speech in question; the length of time taken by each rhythmic unit being therefore dependent upon the number of syllables in it. The greater the number of syllables, the longer the time taken.

However, contrary evidence (eg see Uldall 1971, Roach 1982) has shown that the above features of stress timing are not always corroborated even in an English accent like RP, on which the hypothesis of *isochronous* rhythm was based (cf also Brown et al 1980 for Scottish English). Rhythm will not be considered here since it is not central to our present interest. This should not, however, be construed as an indication that we somehow consider the rhythm of English speech an unimportant prosodic aspect.

We now briefly outline the main conventions used in the body of this study. Focus is represented by the *italicization* of all [+focus] linguistic material. Nuclear accent is represented by big CAPitalization of the accented syllable; constituent accent by small CAPitals (to avoid confusion, lower case letters will be used in the rest of the intonation group even where normal orthographic conventions would require capitals). Word stress is represented by ['] immediately before the relevant syllable. Intonation is represented chiefly by interlinear tonetic transcription: dark large 'tadpoles' indicated nuclear tones;

dark large dots indicate constituent accents; smaller dark dots indicate stressed syllables, and small dots mark the pitches of unstressed syllables. Long level tones are indicated by dashes. Some of these conventions have already been appeared in the previous pages of this chapter. In later chapters the reader will be reminded of the conventions when they are first used.

The notion of focus and its relevance to and role in the assignment of nuclear accents in English and Swahili conversational data is the main subject of Chapter 2. The same chapter will also deal with the role of prominence subordination in accent domain formation and the placement of nuclear and other accents especially in Swahili. Nuclear tones of Swahili are studied in Chapter 3. Intonational patterns typically occurring in the stretches of the intonation group before and after the nucleus are also discussed. Chapter 4 then attempts to characterise the chunking of reading texts into intonation groups; the placement of nuclear accents in the reading intonation of Tanzanian speakers of Swahili and English, and the main pitch movement types used to realize those accents are also discussed. Chapter 4 also contains the only new data for native English speech. Each Chapter, apart from presenting fresh data for Swahili, summarising relevant findings for English in selected recent literature, attempts to make comparisons between the two languages. Finally, an overall summary is provided and some conclusions drawn in Chapter 5.

CHAPTER 2

ACCENT PLACEMENT AND PROMINENCE SUBORDINATION

2.1. Introduction

In linguistic communication, speakers and writers will usually have an intention to focus or draw their audience's attention to all or some of the contents of an utterance or sentence. Those intentions may be signalled in different ways. A speaker or writer may use stylistic syntactic devices such as passivisation, clefting, pseudo-clefting, etc., to focus a stretch (or stretches) which the communication producer wishes to be especially noticed. They may also deploy lexical focusing using words like EVEN, ESPECIALLY, ONLY, PARTICULARLY, etc.

As additional options open to him, the writer in English may sequence the information content in such a way that the information to which he wishes his readers' attention to be drawn will follow the information to which he does not wish to be paid special attention. But, if the writer wishes to make it stand out with even greater prominence in relation to its environment, he may in addition use non-linguistic devices such as underlining the stretch to be highlighted, writing it in *italics,* CAPITALS, or using some other prominent **typeface** or, more drastically, use a constrastive colour ink or print (eg red), etc.

The principal option available to the speaker for highlighting what he wishes to attract special attention from his hearer or addressee is the deployment of pitch prominence; in particular, the placement of the nuclear accent, the most prominent pitch accent in an intonation group. This Chapter therefore sets out to make a comparative study of how English and Swahili speakers locate nuclear and other accents in utterances.

Four principal hypotheses have been postulated in the literature to account for,

explain, or predict the locations of nuclear accents in English. We shall refer to them as (1) *Direct semantic highlighting* (DSH), (2) *Tonicity*, (3) *Nuclear stress rule* (NSR), and (4) *Focus-to-accent* (FTA). Each will be discussed in turn in Section 2.

The notions focus and nucleus recur frequently in both the general linguistic and intonational literature. The relatively wide treatment they have received with reference to data from English and several other European languages, such as Dutch and German (eg. Quirk et al 1972; Ladd 1980, 1983; Gussenhoven 1983, 1984, 1985; Bolinger 1985; Cruttenden, 1986) has, however, not been matched in the treatment of data from African languages, such as Swahili.

This Chapter will not, therefore, be concerned centrally with fresh data or discussion relating to focus and its role in determining the location of nuclear and other accents in English. Instead, our attention will be focused on the relevant data from English already presented and discussed in some of the previous literature surveyed in Chapter 1 (especially that from recent years, like the examples listed in the preceding paragraph) and findings and conclusions therefrom. There are no works on Swahili where the role of focus in the placement of accents in Swahili utterances is treated or referred to in any explicit or direct way. New Swahili data will therefore be presented and discussed in the light of the findings for English data presented or discussed in the literature reviewed, in particular the works of Gussenhoven and Halliday.

The rest of this Chapter is divided into six Sections. Section 2 discusses the main theoretical proposals for accent placement. Section 3 attempts to give a brief clarification on different perspectives on focus. Section 4 deals with focus in Swahili. In Section 5 it is proposed that the placement of nuclear and other accents in Swahili utterances is more satisfactorily handled by prominence subordination. Finally, an attempt is made in Section 6 to bring together salient similarities and differences between the placement of nuclear

and other accents in English and Swahili.

2.2. Theories of Accent Placement

The principal interest of this Section is to give an outline of the main accent placement hypotheses. We shall focus especially on Halliday and Gussenhoven, discussing how the hypotheses are applied to English data. This will then permit us to make comparisons between English and Swahili, after treating the latter in Section 3. We begin by making a clear distinction between the terms *stress* and *accent*

2.2.1. Stress and accent

The terms *stress* and *accent*, like nucleus and focus, are widely encountered in the linguistic phonetic literature dealing with prosodic aspects of speech. They are, however, not always clearly distinguished by those who use them. Some of the authors concerned use only one or the other of the two terms. But many others use both. In this Section it is not intended to duplicate the extensive reviews of the literature on 'stress' and 'accent' found in previous works, such as Ladd (1980).

Instead we shall limit the presentation to one task: to set out clearly how the two terms will be used in this study. This will be achieved in two stages. First the divergent ways the terms have traditionally been used will be outlined. That would then enable us to characterize unambiguously the definition of each of those terms in the usage of this study.

We therefore begin by looking at those who use *stress* but not *accent*, and those who use the second but not first. Of the former, perhaps, the American post-Bloomfieldian structuralists and workers in generative phonology deserve a special mention. Trager and Smith (1951, 1957), for example, give a

phonemic status to *stress*, setting up - in addition to the segmental phonemes - four stress phonemes (1957:36): **primary, secondary, tertiary,** and **weak**. The same system is adopted by Watkins (1958) for his analysis of Swahili intonation. For workers in generative phonology (eg Chomsky & Halle 1968),the term 'stress' is used in two senses. There is *word stress* and *sentence stress* or [1 stress].

In their analysis of intonation in Swahili, Maw and Kelly (1975) use only the term *accent* when referring to prominence of any kind in the data. Stress has no room in their analysis. Talking about prominence in Swahili words, for example, they have the following to say (1975:3).

> All Swahili words have as part of their phonological structure the feature accent.

By contrast, many of the other authors and analysts of intonational or prosodic phenomena make use of both *stress* and *accent*. Abercrombie, Crystal, Gimson, Bolinger, to name but a few. Abercrombie (1976) uses the term 'stress' for what he calls 'general phonetic discussion' (p 51). For him stress is all-or-none; not scalar or gradient.

> A syllable is either "stressed" or "unstressed", that is, "stress" is either present or absent.

He uses 'accent' for a different sense altogether - "a sense which is not general phonetic at all" (p 52). In this respect, 'accent' is said to be "a potential

of salience", where a salient syllable in an utterance will always coincide with an accented one (but not all accented syllables are salient syllables).

It is probably generally in Abercrombie's sense that Maw and Kelly (1975) uses the term 'accent' in the description of prominence in Swahili words and utterances. But, clearly, for Abercrombie there is no phonological role for accent in utterances, since "its place is in the lexicon" (p 52).

Crystal (1980) defines 'stress' and 'accent' separately. The former is said to be associated with the syllable while the latter is reserved for reference to the "stream of speech": stress for words, and accent for the utterance level. Stress, as in Abercrombie, is seen here to be all-or-none.

However, some of Crystal's examples make the boundary-line between stress and accent rather obscure. References to 'word accent' and 'sentence accent', on the one hand, and 'word stress/lexical stress' and 'sentence stress/contrastive stress', on the other, also have a similarly confusing effect. The examples cited to illustrate 'word stress/lexical stress' are the noun and verb contrasts **/'iŋkris/** and **/in'kris/**; while those for 'word accent' are the noun and verb contrasts in **'record** and **re'cord**. There is little doubt that the same phenomenon is here being referred to by two different terms.

In Bolinger (1958), 'accent' and 'stress' receive a relatively thorough treatment. Without repeating the details of Bolinger's elaborate tests and experiments, it can be said that Bolinger was rightly concerned to sharpen the boundary-line between 'stress' and 'accent'. But he then goes on to give morphemic status to accent (cf Trager and Smith's 'stress phonemes'). But Bolinger's conclusion leaves no grey areas in his view of the dichotomy between 'stress' and 'accent' (p 149).

'sentence accents' belong
to the larger intonational
pattern, while stress belongs
to syntax and morphology.

It is abundantly clear therefore that, although the two terms have a wide currency in the literature, there is nevertheless nothing even close to a consensus as regards what concepts they represent for the different users. Both 'stress' and 'accent' feature prominently in our study as aspects of prominence phenomena in Swahili and English. It is therefore imperative that we define them clearly so that the reader may not be faced with any ambiguity when confronted by either term in the course of the study.

What emerges from the literature examined in the preceding paragraphs is a clear indication of a general recognition of the need to distinguish two types of prominence, and to have a separate term for each. In this study, as it will become clear in Section 3, we distinguish prominence at three levels: *word level*, *constituent level* and *intonation group* level. Stress will be used to refer to the first of those levels of prominence and accent for the second and third.

Throughout this study, therefore, the term 'stress' is used to mean a fossilized, inherent property of the individual Swahili or English word in its citation form or as an entry in the lexicon of the language. It is to be understood as synonymous with such terms as *word-stress* and *lexical stress*. Within the phonological structure of the word, stress is properly to be understood as being associated with the prominent syllable in that word.

Therefore, for every entry in the lexicon, to whatever class it may belong, one of the syllables will be stressed. Only one syllable (generally the last but one) of a Swahili word will bear stress prominence. Even monosyllables, only a few

of which receive prominence in Swahili connected speech, are stressed in citation form. In English there is the possibility for longer words to have two stresses, one of which will be relatively more prominent than the other – hence the traditional distinction between *primary* and *secondary* stress or 'full' and 'half' stress. There is no such possibility in Swahili, where stress is all-or-none and is generally predictably located on the penultimate syllable.

We shall mark out the stressed syllable with a /'/ immediately before the relevant syllable. But, in English words where primary and secondary stress are both manifested, /'/ will signify the former and /,/ the latter. The English and Swahili examples below will illustrate the above points.

(20) 'sisi "we, us"

(21) 'mtu "person"

(22) watakapokubali'ana "when they reach mutual agreement"

(23) con,gratu'lations

(24) de'liberate

(25) ,edu'cational

The term *accent* on the other hand, will in this study be understood as a prosodic property pertaining to the actual utterances of connected speech. It is not an inherent property of any of the words of an utterance. Rather, accent is relative prominence resulting from the effects of discourse context and the pragmatic consequences of the interaction between the interlocutors in a given situation.

Accent placement, especially the placement of the nuclear accent, is therefore dynamically involved in the discourse process. The centre of the most prominent accent in an intonation group will coincide with the stressed syllable of the nuclear word in the intonation group. Thus, in (26B), the two accent domains in the intonation group are **nilikuwa mGOnjwa** and **wiki NZIma,** the accents are centred on the stressed syllables ***GO*** and NZI; the first of the accents (BIG CAPITALS) being nuclear. SMALL CAPITALS will be used to represent constituent accents in non-nuclear accent domains. Any word stresses manifested will be represented by /'/ before the relevant syllable.

(26) A mbona hukuja?
how-is-that you-didn't come
"why didn't you come?"

B [*nilikuwa mGOnjwa*] [*wiki* NZI*ma.*]
I-was-being ill week whole
"I was ill the whole week."

2.2.2. Hallidayan proposals for English

The Hallidayan system postulates that English intonation is to be seen as the interaction between three systems. First Halliday proposes the system of **tonality** as the speaker's choice of the manner in which to chunk his text or utterance. The output of such chunking or segmentation is ***tone groups.*** The concept of segmenting speech into chunks is as such nothing new; it is assumed in practically every pre-Hallidayan intonation analysis, and expressed by such terms as *breath-group* or *sense-group.*

Such notions of chunking utterances can be found in analyses stretching through the long line of analysts from Palmer (1922), and O'Connor & Arnold (1961) to Halliday (1967). Phonological categories similar to Halliday's tone group are also to be found in use by other analysts who refer to them by such other terms as *tone unit, intonation unit* or *intonational phrase*. Phonologically, a tone group is characterized as that stretch of speech containing one and only one *tonic* or *tonic syllable*. Since this is to be taken up again later on in the Chapter, we need not expand further on it at this stage.

Halliday then postulates **tonicity** as that choice by which the speaker's decision is guided as to where to locate the *tonic* within any given tone group. In other words, tonicity is the division of the tone group into two segments, *tonic* and *pretonic*. Tonicity also determines the location of the tonic syllable – the most prominent syllable of the tone group – within the tonic segment. Tonality and tonicity are both linked to the speaker's communicative intentions in the stretch of speech being uttered.

This division of utterances and sentences into pretonic–tonic segments is also a division of information into *given–new*. It is a division that is by no means unique to Halliday. As will be shown later on in this Section, this bipartite division of utterances and the information they contain is not dissimilar to distinctions like **presupposition–focus** or **Background–focus**. But, since we shall also return to these at those later points, we shall for the moment proceed to Halliday's third postulate.

The third postulate is **tone**. Having segmented his utterance into tone groups, and having decided where to place the tonic syllable in each tone group, the speaker then obligatorily selects from a set of five tones, that is, from five pitch–movement types which realize the tonic syllable in every tone group (1967:9).

> connected speech can ... be analysed into an unbroken succession of tone groups each of which selects one or other of the five tones.

The notion of tone, like tone group, is not Halliday's original contribution. The tones of English have been a concern of many pre-Hallidayan writers like Palmer (1922). Inventories of tones of varying numbers have been proposed for English by Halliday's predecessors (eg Palmer, Kingdon and O'Connor and Arnold).

Halliday proposes that the speaker's intention ideally is to encode one message content into one syntactic clause. This implies that the clause is his minimal unit of analysis in the system. It roughly corresponds to unmarked or neutral tonality, where one tone group contains only one information unit. But, in marked tonality, a tone group will have more than one unit of information. In that case, each of the tone groups in the utterance will be less than a clause. To illustrate this, we borrow the following example (27) from Brown and Yule (1983).

(27) john has gone into the garden with mary.

Packaged into a single tone group, the contents of the sentence would constitute only one unit of information as in (27). But it could also be broken up into two information units as in (28) or three as in (29), as Brown and Yule (1983:155) show (although they separate one unit from another with a dash).

(28) john
has gone into the garden with mary

(29) john
has gone into the garden with
mary

What this means is that, in (27), the entire clause is communicating only one information unit – "that's what happened". But in (28) and (29) some individual constituents of the clause are seen by the speaker to form separate units of information in the total message he is communicating. The corresponding number of tone groups in each of the representations in (30) – (32) is the same as the number of information units in (27), (28) and (29).[4] The tonic syllables, as in Halliday's notation, are underlined in (29) – (32). Halliday uses // to indicate tone group boundary and / to indicate rhythmic foot boundary.

(30) //john has /gone into the /garden with /mary //

(31) //john //∧ has /gone into the /garden with /mary //

(32) //john //∧ has /gone into the /garden with //mary //

The Hallidayan system has been widely used over the past two decades in the teaching of English intonation by teachers of English as a Second or Foreign Language in many parts of the world. Tanzania is just such a country where

Halliday's course book (1970) is the standard text at University and also forms the basis of teacher training and Secondary English intonation courses. The results have not been satisfactory (as already pointed out in Chapter 1).

It is not only Second Language teachers who have problems with the Hallidayan system. The tone group, although traditionally widely used as a unit of intonation, is far from being universally accepted. Halliday's criterion for separating one tone group from another, as stated earlier, is tied to the tonic or tonic syllable. This was one of the problems which confronted the investigations of Brown and her colleagues (Brown et al 1980), who tested the judgments of linguistically trained subjects with regard to the recognition of tone group boundaries.[5] Although themselves native speakers of English and teachers with long experience in teaching the Hallidayan system, the subjects were unable to identify tone groups reliably. This was caused by their failure to consistently identify tonics and their locations in the test texts presented to them.

Tonicity, the second term in Halliday's tripartite system (the first being 'tonality' and third 'tone'), is closely related to the other proposals for the placement of nuclear accents, which are discussed below. Instead of going any further into a discussion of tonicity at this stage, it will be appropriate to return to it at that later stage, after introducing the notion of focus.

2.2.3. Focus

The notion of focus has been widely invoked in grammatical and other linguistic literature (eg Quirk et al 1972) as well as intonational and phonological literature (eg Akmajian 1979, Grosz 1981, Gussenhoven 1983, Ladd 1980, Johns-Lewis 1986) reflects the general recognition that an utterance or sentence must contain some new or focused information. Among such writers, however, there often exist widely differing views - in particular, differences in

the scope of those two contrasting parts – especially the scope of focused or spotlighted information. Consequently, there are also terminological differences. We shall now outline the more salient of those variations.

The bipartite division of information structure within a sentence or utterance which carries the information content is itself analysed differently by different writers. Some regard it to be a division into *presupposition* and *focus,* as do Akmajian (1979), Gussenhoven (1983, 1984), and Ladd (1980, 1983); or a division into *given* (or old) and *new* information by the Prague School, Halliday (1967, 1967b, 1970, 1985) and Chafe (1970). Such other oppositions as *topic–comment* and *theme–rheme* are also often deployed in this context (eg Halliday (1967b) and Chafe (1970)). The information contained in what certain writers refer to as *comment,* and indeed *Predicate* – as opposed to Subject – is normally also more likely to constitute the focus than is the information contained in *topic, theme* or *subject.*

The different sets of terms used are not always synonymous. To avoid any confusion, this study will adopt **focus** and **presupposition** when referring, respectively, to 'new, variable, contribution, or spotlighted', and 'given, old, or non–spotlighted' parts of the message in an utterance. The term *presupposition,* as used here, is therefore to be understood as generally encompassing such senses as *given/old topic, theme, subject.* The term *focus,* on the other hand, will be approximately equivalent to *new, comment, rheme, predicate* (and even *novel, informative, interesting,* etc.).

The views of focus in the relevant literature are best considered as three sets of assumptions, summed up somewhat as follows. Firstly, in interpersonal communication between speakers, it is assumed (eg as Chafe 1970 does) that, in making an utterance, the speaker's intention is to communicate or transfer information to his hearer or hearers – or, alternatively, as Chafe himself puts it rather strongly, from the speaker's mind to the hearer's mind.

Secondly, it is also assumed that the speaker then encodes bits of that information within each of the semantic constituents which are themselves organized into the surface syntactic structure of his utterance. The third assumption is that, from the speaker's perspective, at least some of the information encoded in the lexico-syntactic surface structure is considered by the speaker to be new, novel, or informative. There would otherwise be little or no point at all in uttering that stretch of speech in the first place.

This implies that the whole utterance or a part of it must communicate something new, novel, informative, interesting, important or in some way specially relevant at that point in the discourse. In other words, the speaker issues an utterance because he has a specific **point** to make at that particular moment in the evolving discourse. What is not new, informative, etc. will, by implication, be what the speaker wishes to be considered already known, given or in some way predictable from the context in which the utterance was spoken.

That may be due to the information contained in the utterance being somehow retrievable from a *linguistically created* environment (in the sense that it may have been already previously mentioned in the same discourse), or is in some way *in the air* - perhaps from the social and cultural environment commonly shared by the interlocutors. These assumptions all fall within the realm of what is generally referred to as **focus**. The speaker will focus or highlight the part - if not all - of the utterance (or intonation group) which he wishes to be regarded as containing new or important information at that stage of the discourse.

2.2.4. *Tonicity*

We can now bring Halliday's tonicity back into the picture. If tonality is concerned with distributing a text or utterance into information units, which are

phonologically expressed in the chunks or utterance segments called tone groups, tonicity is the division or distribution of each tone group into **pretonic** and **tonic** segments and the placement of the tonic syllable within the tonic segment.

We shall not be concerned directly with the tonic syllable itself at this stage, but we refer to it in so far as the speaker's decision as to where to locate it in the tone group (ie tonicity) involves the focus of the utterance in which that tone group occurs. Although the main interest of this Section is limited to focused information, we shall nevertheless need to outline the way Halliday uses the term tonicity. In that way we can show the place of tonicity in focusing new information.

Tonicity, as postulated by Halliday, is the set of choices available to the speaker of English for deciding where in the tone group the *tonic* will occur. The tonic or tonic syllable is always to be found within the tonic segment, where new or focused information is to be found in the tone group. For Halliday the tonic is the *information point,* the concentration or focal point of the new information.

The tonic syllable and anything following it makes up the *tonic* or *tonic segment.* Only the tonic segment is obligatory in the tone group; the pretonic may be optionally present. Moreover, even within the tonic segment, only the tonic syllable is obligatory, and may optionally be followed by one or more syllables or words within the same tone group. These post tonic syllables constitute the tail.

The tonic segment is, for Halliday, the part of the tone group which contains the information that the speaker wishes should be considered *new.* The pretonic segment, by contrast, contains information which the speaker assumes is not new and, therefore, should be considered *given* or *old* within the relevant

context of the discourse. In Halliday's own words (1967b:204), the new information contained in the tonic segment is described as follows:

> one kind of emphasis, that whereby the speaker marks out a part (which may be the whole) of a message block as that which he wishes to be interpreted as informative. What is focal is 'new' information ...

The location of the new information may be neutral, or unmarked; or it may be marked. This depends on the choice of tonicity. It is neutral or unmarked when tonicity itself is unmarked; that is, when the tonic or tonic syllable falls in the final lexical item of the tone group. Neutral or unmarked tonicity therefore also implies that there is a pretonic segment actually occurring before the tonic segment of that particular tone group (unless, of course, the tone group consists of nothing but the tonic).

This is exemplified by (33), taken from Halliday (1967:38). For Halliday the tonic (more on this later on in Section 5), is represented by underlining the tonic syllable - *Tues-* and *John* in (33). In (33a) **I saw John on** is the pretonic and **Tuesday** the tonic segment. In (33b) the pretonic and tonic are, respectively, **I saw** and **John there**.

(33) a $//_{\wedge}$ i /saw /john on /tuesday //

b $//_{\wedge}$ i /saw /john there //

The location of new information is, however, not neutral – that is, it is regarded as marked – when tonicity is not neutral. This happens when the tonic syllable occurs either in an item which – although tone group final – is not lexical (34), or in a lexical item which is in a location other than final (35). Both (34) and (35) are also from Halliday (1967).

(34) //$_{\wedge}$ i /saw /<u>him</u> //

(35) //<u>john's</u> de/parted //

The internal structure of the tone group is, therefore, such that what the speaker regards, and wishes to be treated as given information (if present) precedes what he regards, and wishes to be treated as new. This does not therefore apply to such cases as (35), where there is marked tonicity. This type of information sequencing is generally shared by other analysts of English (eg Quirk et al 1972). The given–new information sequencing is referred to in such literature as the principle of *end–focus*.

2.2.5. ***Nuclear stress rule***

It is worthwhile at this point to consider the other contending views of accent placement held by some of the prosodic analysts working in the field. The analysts who adopt the Nuclear Stress Rule (**NSR**) and its modifications propose to explain the occurrence and locations of accents in the utterances of connected speech by appealing to syntax. The proponents of this view, of course, include the followers of Chomsky and Halle (1968), as well as their post–Bloomfieldian forerunners – such as Newman (1946) and Trager and Smith (1951, 1957). Outside the NSR tradition, Halliday also relies heavily on syntax,

in particular where decisions on tone group boundaries (ie tonality) are concerned.

According to the adherents of the NSR approach to accent placement, any well-formed sentence has a single primary stress - variously called *sentence stress,* [1 stress] or *sentence accent.* The sentence accent location is seen to be structurally determined by syntactic factors. But what is termed *contrastive stress* depends on nonsyntactic factors. The syntactic approach is the first of the two traditional views of accent placement in the utterances of normal speech.

2.2.6. *Direct semantic highlighting*

The second approach holds that the placement of sentence accents cannot be explained or predicted by appealing to syntactic principles. It is claimed instead that, since the occurrence of accents is meaningful, it must be determined by semantic principles. Essentially, this view is based upon the belief that the speaker has a free choice as to what in his utterance he wishes to *highlight* in keeping with his communicative intentions vis a vis his co-interlocutor - the hearer or addressee.

This approach has, consequently come to be referred to as the *semantic* approach, the *highlighting* approach, or even *direct semantic highlighting* **(DSH)** approach to accent placement. Its foremost champion over the years has been Bolinger (eg 1972, 1985). The approach is however, not unlike the views held by certain other analysts, such as those in the Prague School (eg Danes 1967, Firbas 1979), or by such prosodic investigators as Brown (1983), Nooteboom et al (1981) and Nooteboom and Terken (1982).

2.2.7. *Focus-to-accent*

Since the mid-seventies, a third approach to accent placement has been taking shape. It is critical not only of the *syntactic* approach, but also of the *semantic highlighting* one. Its proponents seek, instead, to reconcile or - as stated explicitly in Ladd (1983) - to integrate certain crucial aspects of both traditional views. They envisage roles for both syntax and semantics (including pragmatic and contextual factors) in any sound theory that will successfully explain the distribution of nuclear and other accents in utterances.

Subsumed under the umbrella of this third approach are the views expressed in the works of such prosodic investigators as Schmerling (1976), Ladd (1980, 1983) and Gussenhoven (1983, 1984, 1985). Of all those, Gussenhoven (1983) offers by far the most explicit and comprehensive account of this approach. For that reason, a short resume' of Gussenhoven's hypothesis will now be presented as a useful background for later discussion in this Chapter. It should be pointed out that, *accent* as used by those authors, generally means the same as what is in this study called *nuclear accent* (since we maintain a distinction between *stress* or word/lexical stress, *constituent accent* and *nuclear accent.)*

The essential core of Gussenhoven's case against the two traditional accent placement approaches, in particular, his strong opposition to the semantic highlighting position, rests on (1) the concept of *focus* and his notion of the extent of the material which the speaker may decide to mark as [+focus] in a given utterance, and (2) that the location of the nucleus (ie nuclear accent) is entirely predictable once [+focus] and [-focus] have been assigned to that utterance. This approach to accent placement is therefore sometimes referred to as the *focus-to-accent* (**FTA**) approach.

Focus is assigned on semantic grounds; not syntactic ones. However, once

focus distribution in the utterance in question has been determined, the location of accent within the semantic constituents of that utterance structurally *follows as a matter of course.* The contrast of the respective positions held by Gussenhoven and Bolinger emerge sharply in their running debate on accent placement (eg *Journal of Linguistics* 19, 21, *Journal of Semantics* vol. 2, no. 2).

Bolinger staunchly maintains that the speaker is free to locate sentence accents on specific words, freely selected in the utterance in order directly to focus and highlight those words for their relative *informativeness, power* or *interest* In short, the speaker is free to signal to his hearer any specific individual word(s) which he considers crucially important for the successful implementation of his communicative intentions. Such words are therefore directly highlighted by placing the nuclear accents on them.

Such direct highlighting is totally rejected by Gussenhoven. Similarly, syntax-dependent descriptions of intonation are dismissed as 'bankrupt'. For Gussenhoven the placement of nuclear accents must follow as a consequnce of focus distribution. As Ladd (1983:) points out, Gussenhoven considers accent as the concrete realization of the otherwise wide-scoped and abstract concept of focus on the surface individual word in an utterance. Gussenhoven puts the case in no uncertain terms (1983:11).

> the location of the nucleus of the intonation contour is rule-governed, ... [and one of] the chief functions of the nucleus is to signal the focus distribution of the sentence.

Gussenhoven's hypothesis is advanced and supported with ample evidence,

mainly from English and, to some extent, also from Dutch (1983).

It is pursued further and exploited (1984) and reiterated with further defence (1985). By appealing to the notion of a broad-scoped focus, Gussenhoven not only argues effectively against the syntactic and semantic highlighting views; he also provides a method of bridging the rift between those two traditionally opposing views.

An utterance is viewed as being made up of one or more of the semantic constituents of Argument, Predicate, and, Condition. He then goes on to propose that the focus of the utterance may extend beyond the individual words and even an individual semantic constituent, to cover the whole utterance, or a part thereof. It is also argued that focus may even cover semantic material that is less than a whole constituent. This is the case, for example, in **minimal** and **polarity** focus.

In summary, the traditional contention was whether the surface locations of nuclear accents in utterances are determined by direct semantic highlighting or by syntactic predictability. But should it really be a choice of one or the other? After all, whichever word the accent happens to fall on, it clearly fulfills part of the speaker's semantic and pragmatic intentions; and, at the same time, that word occurs in a well-formed syntactic chain.

Logically, the location of a nuclear accent should satisfy both semantic/pragmatic and syntactic conditions. Clearly, therefore, Gussenhoven's notion of an extended scope of focus is a positive step forward towards integrating syntactic, semantic, pragmatic and contextual factors.

2.2.8. Accent placement in English

It is appropriate at this juncture that we turn our attention to the placement of nuclear accents in English. We shall briefly summarize Gussenhoven's (1983)

account. This will form a firm basis for us then to make comparisons between English and Swahili after we have considered the situation in the latter in the next Section.

For Gussenhoven, as a consequence of his notion of extended scope of focus, the material in utterances is either all marked [+focus] (Variable), or partly [+focus] and partly [–focus] (Background). Under no circumstances can a whole utterance be [–focus]. Thus the whole utterance will be [+focus] if it consists entirely of material that constitutes Variable (or information that the speaker regards to be his ***contribution*** to the discourse at that stage). But when Variable and Background are both present, the utterance will be marked [+focus] where the material is Variable, and [–focus] where it is Background.

Gussenhoven regards accent as having a very specific purpose. It is seen as the main means by which the speaker signals to his hearer the focus distribution in his utterance. The placement of nuclear accents therefore follows certain definite principles. Accent placement is accomplished by the Sentence Accent Assignment Rule (**SAAR**), which operates on the focus domains. **SAAR** operates in two stages (see (7) above). The first of these is focus domain assignment (DA), where one or some or all of the semantic constituents in the utterance are marked [+focus]. It is illustrated by Gussenhoven's own example (1984:23) as shown in (36B) ([+focus] is represented by *italics*). Only the Predicate and Object Argument are [+focus].

(36) A what's papa done to tommy?

B papa *has given* tommy *a gun*

The second stage of the rule is the assignment of accents, where [+accent] is assigned to every Argument, Predicate or Condition marked [+focus]. This

means that, for Gussenhoven, a focus domain is also an accent domain. However, in an Argument-Predicate or Predicate-Argument focus domain, there will be only one accent, which goes on the Argument. As shown in (37) below, one accent goes on the lexical word in the Predicate (ie GIV*en)* and the other on the Object Argument. The rightmost accent is the nuclear accent, hence **GUN**.

(37) papa *has* GIV*en* tommy *a GUN*

When [+focus] marks material that is less than a whole constituent, there is said to be *minimal* focus. This is exemplified in (38), where only the preposition **FROM** is focused and therefore bears the nuclear accent of the first domain, and STOP that of the second (its context is provided and discussed later on in this Section).

(38) [traffic coming ***FROM*** Princes STREET]
[has been SIGnalled to STOP.]

A special instance of minimal focus is *polarity* focus, where everything except the polarity of the utterance is [-focus], as in (39B). In such cases, the nuclear accent is forced to go a a non-lexical element.

(39) A is the HOUSE on fire?
B no, the house *IS'nt* on fire.

So far we have dealt with the relationship between of focus distribution and

the location of the nuclear accent in English. Now, before moving on to the examination of Swahili data, one point of clarification must be made.

2.3. *Micro* and *macro* focus

The different views on focus in the literature fall roughly into two main groups: those who see focus as a *specific point* in an utterance, a sentence or intonation group, and those authors for whom the scope of focus need not necessarily be restricted to any such specific point within the utterance, but may extend to cover even the entire intonation group or the whole utterance.

Perhaps the single most important criterion of contrast between these two views of focus is the location of the **nucleus** with respect to the focused information. For analyses which we here categorize in the first group, the nucleus is seen to be coterminous with what is focused. For those in the second group, the nucleus, although occurring within the focused information need not be co-extensive with it.[6] We shall refer to these two perspectives, respectively, as the **micro** and **macro** views of focus, respectively.

In a micro view, focused information coincides with the nucleus or tonic, or at least with the nuclear word (which bears the nucleus or tonic). Halliday's notion of tonicity may at times appear to present a micro view of focus. This is often particularly so in the case of neutral or unmarked tonicity, where the tonic often falls at the end of the tone group. In this type of tonicity, the tonic must by definition fall on the final lexical item in the tone group and, if there is no tail, the focused information will consist of nothing but the nuclear word (which may even be monosyllabic). Here is a sample of representative examples from Halliday (1967:23). Halliday's usual underlining of new or focused information (which is also the tonic) has been replaced here by capitalisation.

(40) //∧ i /very often /meet him in the /SQUARE //

(41) //∧ they /GRADE them //

(42) //∧ how /long do these /changes /TAKE //

(43) //∧ that's /why it's so /awful to /have
to get /RID of it //

(44) //did they ever /get a /hundred per /CENT //

When marked tonicity results in the tonic falling on a tone group final item which is non-lexical, the effect is also an apparent instance of micro focus. This can be seen in (45), also from Halliday (1967).

(45) //what happens if you are /NOT //

But all those are not in fact instances of micro focus, since Halliday does not subscribe to that view, as the scope of focus in (41) and (43) clearly attests. They are merely instances of narrow or contrastive focus as in (45). That (40) - (45) are decontextualized may account for the ambiguity. Appropriate contexts would no doubt show that those utterances contain nothing but new or focused information. The focus is therefore truly narrow only in (45).

Perhaps true instances of micro focus are to be found, in particular, in writings

like those of Chafe (1970).[7] In Chafe's view (eg p 215), **new** is assigned to the *roots* of the surface structure lexical items satisfying certain conditions. Thus, for example, he states:

> in the least marked sentences
> the *verb, and only the verb,*
> *contains new information.*
> (emphasis added)

Such a view is illustrated by his own examples, like (46) – (48) below.

(46) it's RAINING.

(47) the box is EMPTY.

(48) david LAUGHED.

Chafe assigns **new** to the roots of the capitalised words. In sentences containing more than one noun or argument, new is assigned not to the root of the verb but to that of the rightmost noun. His examples of this are (49) – (51).

(49) the box is under the TABLE.

(50) david emptied the BOX.

(51) lisa received a PRESENT.

It is clear that such a view does not take on board the fact that (46) – (51) are only examples of narrow or contrastive focus (that is, *RAINING* as opposed to *SUNNY*; *EMPTY* as opposed to *FULL*; *LAUGHED* as opposed, say, to *SCREAMED*; *TABLE* as opposed to *BED*; *BOX* as opposed to *his POCKETS*; *PRESENT* as contrasted with, say, *A SMALL LETTER BOMB.*

Appropriate contexts could be suggested where each of Chafe's above examples has not only a broad focus but full focus. For example, with a simple context like *What's happened?* (40) – (51) could each be fully focused, giving something like B in (51a).

(51a) A what's happened?

B *lisa received a small LETter bomb.*

By contrast, Halliday's marked tonicity is unquestionably a clear instance of macro focus, when the tonic is located on a non-final non-lexical item. This is because, in such cases, the tonic syllable – which always lies in the tonic segment, where lies new or focused information – may fall at the very beginning, or in the middle. In this way, the focused information is contained not by the single syllable (ie tonic or nuclear syllable) or by the nuclear word alone, but by a fairly long stretch of the tone group (eg (52), (53) and (54)) – which may even be the entire tone group (52). These examples are from Halliday (1970).

(52) //WHAT'S it /called //

(53) //^ it /MAY be that it's //
just the /GENeral /rule that //

ALL the /g.c.e. /papers have to be /

marked out of /two /hundred //

(54) //∧ there's a/NOTHer one in the /kitchen //

But the macro view of focus is particularly characteristic of the treatment of focus phenomena by Gussenhoven (1983, 1984, 1985) and Ladd (1983). Although Gussenhoven avoids giving an explicit definition of focus, his usage nevertheless leaves little doubt as to his position. To begin with, he sees his dichotomy **focus-presupposition** as roughly equivalent to comment-topic, rheme-theme or new-given used by other authors before him.

It is obvious that Gussenhoven essentially adopts the substance of Brazil's (1975) approach (see Chapter 1), slightly reanalysing the dichotomy focus-presupposition. The 'body of knowledge about the world operated upon by speakers and hearers which they assume to be mutually shared' - what is otherwise referred to as 'presupposition' - is termed **background** by Gussenhoven. The 'semantic material to which speakers apply one of a number of *manipulations* with respect to that background' is termed **Variable** or 'contribution'. For all intents and purposes, variable is roughly equivalent to **focused information**.

Gussenhoven also slightly repostulates focus as 'the linguistic category, specifying the size of the variable'. The size of the variable or focus can then vary from the whole sentence or utterance to varying lengths of it and down to *minimal* and *polarity* focus. Obviously, this macro view of focus fully accommodates both narrow and broad focus.

A significant difference between the *micro* and *macro* views of focus in the literature is the domain in which focus is assigned. In micro focus, focus

domains,as we have just seen, may be as small as a monosyllabic morpheme or as long as a polysyllabic root. Thus, for example, Chafe (1970) formulates rules in which *new* (ie focus in the terms used here) is assigned to such morphemes as the roots of nouns and verbs.

In macro focus, the domain in which focus marking takes place is appropriately the constituent. The term constituent, taken to mean roughly the same as in the usage of Gussenhoven (1983), permits us to take Arguments (those constituents that function as *Subjects* or *Objects*); Predicates (those constituents that function as *syntactic predicates*), and Conditions (those that function as different kinds of *adverbial*) as single whole constituents. But the distribution of focus may also extend outside single constituents like Arguments, Predicates and Conditions. Two or more such Constituents may form one larger single constituent. In this sense, a whole utterance or sentence may form one single constituent containing only one and the same focus domain, as in the case of (55B).

(55) A what's on today?

B *we're going to the RACes.*

(56) A what are we doing today?

B we're *going to the RACes.*

Both (55) and (56), borrowed from Quirk et al (1972), are examples of broad focus in English. There is no doubt that this is an altogether more satisfactory approach than a micro one such as Chafe's, since focus has to do with the

communication of meaning and transmission of messages between speakers in discourse contexts. Focus, in the macro view taken by Gussenhoven, is therefore logically connected with the semantic constituent, which is what the speaker deploys within the syntactic framework of sentences used in discourse. The superiority of a macro view over a micro one is that the former also allows for a distinction between **broad** and **narrow** focus. Broad and narrow are here not regarded as a categorical opposition. Rather, they constitute two ends of a continuum. Thus (55B) – with full focus – has a broader focus than (56B), which has only a partial or non-full focus.

The assignment of [+focus] or [-focus] depends on two main sets of factors. The first of these sets of factors is centred on the speaker or originator of the communication. We refer here, in particular, to the speaker's communicative intentions, the point he wishes to make through his utterance. The assumption is that the speaker has got something new or important that he wishes to transmit to his addressee or audience – whether at the beginning of a new discourse or to introduce a new point or elaborate one that is already in the air in the course of an on-going discourse. And that is what he will encode in the utterance which he makes. But, strictly speaking, the precise nature and content of the speaker's comminicative intentions is, of course, known only to the speaker himself.[8]

Nonetheless, whatever the precise nature of those intentions may be, they cannot be divorced from the second set of factors. This latter is centred on what Gussenhoven has referred to as the *world operated upon by speakers and hearers which they assume to be mutually shared* (1984:22). This obviously includes the pragmatic factors and discourse context which constrain both the speaker's communicative intentions and the utterance in which they are encoded for transmission to the addressee.

In (55) and (56) – and in all other examples – [+focus] is represented by *italics*.

The focus of (55) is as broad as it possibly can be, covering the entire utterance. This is because only the the whole of B's response constitutes the appropriate answer to B's question, supplying the information sought by A. But (56) allows for a narrower focus than does (55). For, in (49), the inclusion of *we* in A's question expands the presupposition of B's response from (55A) to (57). Consequently, the focus of B's response (56B) is reduced or narrowed to just the italicized stretch: *going to the RACes.*

(57) we're doing something today.

The phenomenon illustrated by (55) and (56) for English is also, not surprisingly, matched in Swahili data. Consider for example (58) and (59). The context is as follows. Speaker A knows that his friend, B, had attended an athletics meeting at the local stadium earlier that day. Some acquaintances of theirs had taken part in the competition, among them - Juma.

(58) A mambo yalikuwaje?
things they-were-how

"how did things go?"

B *juma alishinda mbio zake zote.*
he-won race his all

"Juma won all his races."

(59) A juma alifanya vizuri?

he-did well

"did Juma do well?"

B juma *alishinda mbio zake zote.*

he-won race his all

"Juma won all his races."

In (58B), just as in the English example (55B), there is a full or broadest possible focus. But, in (59B) - just as in (56B), the focus-presupposition relations have changed slightly. The reason is obvious: (58A) assigns Juma to the discourse Background and can, therefore, be presupposed in (58B). Thus, in Swahili - as in English, focus may be full (or at its broadest) or it may be reduced. It depends on the scope of the presupposition. The extent of focus is in this way determined by the extent of presupposition. The narrower the latter, the broader the former, and vice versa.

In English, when the focus is not full, it may be narrowed by degrees as may be required by the context and presuppositions of the discourse in question. And that the narrowing can be a continuum determined by the relevant context is evidenced by the fact that we can change the focus-presupposition relations, not only from (55B) to (56B) but even down to that in (60B). The result is an increasingly narrower focus from (55B), where everything except the prepositional phrase is [-focus], to (60B) due to the expansion in the presuppositions. This is further demonstrated by Gussenhoven's example (1984:23), in (61).

(60) A where are we going today?

B we're going *to the RACes.*

(61)	what's happened?	*Papa has given tommy a GUN.*
	what's papa done?	Papa *has given tommy a GUN.*
	what's happened to tommy?	*papa has given* tommy *a GUN.*
	what's papa done to tommy?	papa has *given* tommy *a GUN.*
	what's papa given tommy?	papa has given tommy *a GUN.*

To sum up, there are two views of focus: micro, where the material in focus is coterminous with the nuclear root, and macro - where what is focused need not to be coterminous with the nucleus. On the contrary, in macro focus, the [+focus] material may be a whole constituent or more, or even the whole utterance or sentence. Clearly, the distinction between narrow and broad focus is only relevant in macro focus. A macro view accounts for English and Swahili data more adequately than a micro view can.

2.4. Focus in Swahili

In the five sets of questions and answers in the English example in (61), the first response constitutes one single utterance-long [+focus] constituent. But each of the remaining responses is only partially focused since one or more individual constituents may be [+focus] while the rest are [-focus]. It will be shown a little later on in this Section that we can construct a very similar situation for Swahili (see 62). This could hardly be controversial. For, if focus has to do with something we might roughly describe as the 'weighting of information' by speakers and writers in communicating messages to their

addressees or audiences, it follows that the role of focus is indisputable not only in Germanic languages like English (or Dutch), but also in other, non-Germanic ones such as Swahili.

It would undoubtedly be difficult to find a natural language which totally lacked some means of contrasting old (or given, etc.) from new information; or what the originator of a communication regards as stretches of an utterance that are in some way more important from those which he considers to be less so; or parts of his discourse to whch he wishes to draw or focus his interlocutor's attention from the rest of the message which he may wish to be considered presupposed; or parts that he wishes to emphasise for reasons known to himself and those that he does not wish to emphasise.

In this respect, then, the question to ask is quite clearly not whether or not the phenomenon of focus as such has a place in a given language, such as Swahili. Rather, it is more relevant to inquire ***how*** is focus manifested or signalled in that language? and ***what*** specific functions does it perform in the language, especially in helping to determine the location of the nuclear and other accents in utterances? Chafe (1970:233) rightly observes in the following remark. [9]

> Every language, it should be
> remarked in closing, has its
> own way of representing
> old and new information
> in its surface structure.

In previous studies of Swahili, there are neither references to nor treatments of focus. Swahili prosodic, intonational and phonological analyses such as Ashton (1947), Watkins (1958), Polome' (1967) and Maw and Kelly (1975) - although claiming to be based on spontaneous speech - treat utterances and sentences

as citation forms in isolation. They appear to be totally oblivious of the effects of linguistic and extralinguistic contexts of utterances in discourse. Attention is devoted wholly to intonation contours, as though the latter were not in any way related to the semantic, contextual or pragmatic constraints of the utterances and sentences concerned.

It therefore comes as little surprise that the notion of focus is not even mentioned or referred to at any point in those authors' discussions. Even Maw and Kelly, firmly based as they are on the Hallidayan system, discuss tonality (their Chapter 3) and tonicity (Chapter 2) without even a single reference to Halliday's ***given-new*** distinction. Instead, the discussion is centred entirely on the relation between tone groups and the syntactic clause. The following is a typical statement from Maw and Kelly (1975:23).

> The grammar and the intonation interact at clause level, where the most common situation is to have the boundaries of tone-groups and clause coinciding, one-to-one.

To demonstrate both the validity and role of focus in Swahili data, we shall begin with a set of Swahili utterances similar to Gussenhoven's example cited in (61). The focus of the Swahili example in (58B) could similarly be narrowed as systematically as the English case in (61), by changing the operative focus-presupposition relations in such a way that A's question adds an increasing amount of material to the discourse Background. This consequently - as we saw in the English example - systematically widens the presupposition as it proportionately narrows the focus of B's response. We illustrate this in (62), itself an expansion of (58). In each case, the question provides the presupposition.

(62) mambo yalikuwaje? *juma alishinda mbio zake zote.*

juma lifanya vizuri? juma *alishinda mbio zake zote.*

juma alishinda? juma alishinda *mbio zake zote.*

juma alshinda mbio gani? juma alishinda mbio *zake zote.*

juma alishinda mbio zake? juma alishinda mbio zake *zote.*

juma alishinda mbio zake zote? *ndiyo* juma alishinda mbio zake zote.

Contrary to the literature on Swahili prosody and intonation, in segments of interactive speech in Swahili, such as (62) above and (63) - (64) below, it is surely much more logical and fruitful to investigate how the speaker utilises the prosodic structure of Swahili in order to successfully implement his communicative intentions encoded in the utterance. Without any doubt, the next step in such an investigation - having established the legitimacy and necessity for it, is to investigate the role of focus in Swahili utterances. Let us consider some more Swahili data before moving on to consider the role of focus in determining the location of the nuclear word, in order to make comparisons between Swahili and English.

(63) A shamba lina mazao gani?

farm it-has crops what

"what crops are in the plot?"

B kuna mazao *mbalimbali.*

there're crops various

"there are various types of crops."

(64) A tatizo hilo limekuwapo kwa muda gani?

problem that it-has-been- for time what present

"how long has the problem been there?"

B ni *mwaka mzima sasa.*

is year whole now

"it's been a whole year now."

Examples (63) - (68) illustrate the distribution of [+focus] and [-focus] in utterances from spontaneous speech. Like (62), which is constructed to replicate Gussenhoven's example in (61), the spontaneous speech data shows that the scope of [+focus] can be as narrow as one semantic constituent (63, 65), some of the constituents (64), most of the constituents in the utterance (68), or all of the utterance (66 - 67).

(65) A mmejaribu kulitatua vipi?

you've-try to-it-solve how

"how have you tried to solve it?"

B tumejaribu *mambo mawili.*

we've-try things two

"we've tried two things."

Trying (as Maw and Kelly do) to establish relationships between the syntactic structure of the utterances and phonological constructs such as tone groups (however the latter are defined) is probably, at best, a very round-about and

doubtless inadequate way of decoding the speaker's encoded message. Saying that should not give the impression that we envisage no role at all for syntax here. After all, the surface structure of the speaker's utterance necessarily draws upon the lexicon and is framed within the syntactic patterns permissible in the language.

(66) A naam, unaweza kutueleza ni yapi?
yes you-can to-us-tell is which
"could you tell us what they are?"

B *kwanza tulizungumza na kituo.*
first we-spoke with station
"first we discussed it with the station."

(67) A sasa mtafanya nini?
now you-'ll-do what
"what will you do now?"

B *tumeamua kununua jenereta.*
we-'ve- to-buy generator
decide
"we've decided to buy a generator."

(68) A matunda gani?
fruits which

"which types of fruits?"

B *Nimepanda* aina *TAtu: ndizi, mapapai na maCHUngwa.*

I've-plant types three banana pawpaw and oranges

"I've planted three types: bananas, pawpaws and oranges."

Since the relevance of focus in Swahili interactive language data is demonstrable (as evidenced by eg (62)), we should proceed to investigate in more detail the formation of focus domains, and how the location of the nuclear word is determined.

2.4.1. Focus domain formation

In addition to the *remote* background or environment set by the extralinguistic context, A's question in each of the above examples sets the *immediate* background and defines the presuppositions that will constrain both the relevance, completeness and appropriateness of B's response in each case. Consequently, the focus of the response varies from the broadest possible (ie full focus) in (66B) and (67B), through various degrees of reduction or narrowing: such as the slight narrowing in in (68) where only a part of the Argument ***aina TAtu*** - *types-three* (*"three types"*) - is [-focus], and (60B) where only the Predicate is [-focus]; the greater contraction of focus in (65B) where the distribution is fifty-fifty; to the even greater reduction in (63B) where the first constituent and the head of the second are [-focus].

Although the whole utterance may constitutes one single focus domain, one or more of its constituents may contain [+focus] material, and the remainder one or more [-focus] material. In all but the first of the responses in (62), only one part is marked [+focus] while the other is [-focus]. With the exception of the

instance of *polarity focus,* the [+focus] material is either the Predicate and whatever follows it (ie Object Argument and its modifiers), the only the two modifiers, or the second modifier alone. The reason is, of course, that - in each case - the [+focus] stretch in each response contains the information sought by A's corresponding question. (63B), (64B) and (69B) are quite similar in this respect.

(69) A ukosefu huo unatokana na nini?
absence that is-caused by what
"what is the cause of the shortage?"

B ukosefu wenyewe *unaanzia kwenye kituo.*
absence itself it-begins in station
"the shortage itself originates in the station."

Examples (70B) - (74B) illustrate that a given utterance or intonation group may contain more than one [+focus] stretch, with two stretches of [+focus] material separated by a [-focus] one. What is underscored by those examples is that a given focus may consist entirely of [+focus] information; one part with [+focus] and the other with [-focus] information, or two or more [+focus] stretches separated by [-focus] information. The essential point is that in real-life speech (unlike reconstructions such as (61) or (62)), we are not all the time faced with neat, continuous constituents which are either [+focus] or [-focus]. On the contrary, as (70B) - (74B) indicate, we are frequently also confronted with discontinuous stretches of [+focus] interrupted by [-focus] ones.

(70) *upande wa juu* kuna *mboga na viazi sukari.*

side of up there's veg. and potatoes sweet

"the top side has vegetables and sweet potatoes."

(71) *hata, sio* mengi *sana.*

never not many very

"no, not very many."

(72) *hawawezi kutupa* umeme *wa kutosha.*

they-can't us-give electricity of enough

"they can't supply us with sufficient electricity."

(73) *sio* sehemu nyingi *sana.*

not part many very

"not very many parts."

(74) A juma alifanya vizuri katika mbio zipi?

he-did well in race which

"in which races did he do well?"

B juma *alishinda* mbio *zake zote*

he-won race his all

"Juma won all his races."

The [+focus] information in the focus domains in the Swahili data – as in English – consists of the speaker's new or additional contributions to the discourse in progress. This is material that is either *informative,* regarded to be of *special importance,* or as in some way bearing *top relevance* or *interest* at that stage of the discourse. To illustrate, the simple classification in Table 1 attempts to group the [+focus] stretches in a few of the examples discussed so far into the three types just mentioned (the glosses for the Swahili examples are provided in Table 1a for easy reference).

TABLE 1. A simple classification of [+focus] material.

TYPES	EXAMPLES	
1 Informative	a.	*juma alishinda mbio zake zote.*
	b.	*mambo mawili.*
	c.	*tumeamua kununua jenereta.*
2 Special Importance	a.	*aina tatu tu.*
	b.	*hawawezi kutupa*
	c.	*hata, sio*
3 Top relevance/ High interest	a.	*wa juu*
	b.	*gari jipya kanunua joni.*
	c.	*zake zote*

Although we list only three examples for the first type in the simple classification, it ought to be emphasised that most [+focus] stretches of an

utterance would usually normally be associated with an informative contribution from the speaker. For this reason, therefore, even those examples listed above in the second and third types should also be considered informative.

Table 1a.

juma alishinda mbio zake zote

he-won races his all

"Juma won all his races."

mambo mawili

things two

"two things"

tumeamua kununua jenereta.

we-ve- to-buy generator
decided

"we've decided to buy a generator."

aina tatu tu

types three only

"only three types"

hawawezi kutupa

they-cannot give-us

hata, sio

never it's-not

"no, it's not."

wa juu

of above

"the top (side)"

gari jipya kanunua joni.

car new he-bought John

"a new car, John's bought."

zake zote

his/her all

"all his/her"

What is special, however, about the [+focus] stretches in Table 1a (2) is that there is something added on top of the plain informativeness. This may have to do with the special emphasis given to the qualifying adverbial - **tu** - (2a); or it may be due to *counterassertiveness* (2b), or double counterassertion (2c).

Apart from being informative in a general way, type 3 [+focus] stretches also have something special added. In 3a, this special element is the contrastive nature of ***wa juu*** - "the top" - vis a vis ***wa chini*** - "the bottom" - or ***ya katikati*** - "the middle" - both of which sections of the plot are also referred to in the same discourse.

In focus domain formation we are concerned not only with the distribution of [+focus] and [-focus] information stretches within the message, but also - and primarily - with the domain in which such a distribution takes place. According to the distribution of [+focus] and [-focus], the data shows that there are four main possibilities.

The first possibility is where the whole utterance is marked [+focus]. In such a case, only the total information conveyed by the whole utterance provides a sufficient, relevant and acceptable answer to the question asked by the first interlocutor in the discourse. As example of this, we have the response to the first question in (75), the first response in (62).

(75) *juma alishinda mbio zake zote.*

Another possibility is for more than one constituent in the utterance (but less than the whole utterance) to be marked [+focus]. This means that some of the information contained in the focus domain is not new and the speaker can consider it part of the presupposition or background, while the remainder

provides new information relevant to A's question or to that stage of the discourse. Typical examples of this are the response to the second question in (61) or (62), the response to the third question in (2), and (64B).

In the response to the second question in (61), only the Subject Argument - *Juma* - is already given in the question. But the Predicate - *alishinda* - and Object Argument - *mbio zake zote* - supply new information and are, therefore, all [+focus].

In (57), the third question provides both the Subject Argument and Predicate as the presupposition for the response. Here it is, therefore, only the Object Argument and the Condition, that are [+focus]. In (64B), only the Predicate - *Ni* - "is" - is [-focus]. The rest of the utterance, namely, the Argument - *mwaka mzima,* "year whole" - and Condition - *sasa,* "now" - is [+focus].

(76) tumejaribu *mambo mawili.*

The third possibility for focus distribution in Swahili utterances is for only one consituent to be marked [+focus] in the utterance, while all the other constituents are considered given or presupposed. The response to the third question of (62), **Juma alishinda *mbio zake zote,*** is one example of this. The Subject Argument is contained in the question. It is therefore part of the background and presupposition. Only the Object Argument ***mbio zake zote,*** "race-his-all" , is [+focus]. Similarly, in (76), only the Argument - ***mambo mawili,*** "two things" - is [+focus]; the Predicate is given by the question.

Fourthly, there are instances where the information that is [+focus] is contained by a chunk which is less than a whole constituent. That is, it cannot be considered an Argument, Predicate or Condition. A typical example of this is *Ndiyo* - "yes" - in the response to the sixth question in (62). This is, of course,

a case of 'polarity' focus.

But there are also other possibilities such as the case of discontinuous stretches of [+focus] interrupted by [-focus] stretches (discussed earlier). This implies that certain individual semantic constituents containing the speaker's contribution are separated by others that are regarded to be already available in the background. But, as (77) shows, the [-focus] chunk may be only a part of a constituent the remainder of which is [+focus].

(77) A kituoni wameeleza kwa nini umeme hautoshi?

at-station they-'ve- explain for why elect- ricity it-'s-not- enough

"at the station, have they explained the power shortage?"

B *wanadai kuwa mahitaji* ya umeme *yamewazidi nguvu.*

they-claim that demand for elect- ricity they-'ve-them- exceed strength

"they claim that the demand has gone beyond their capacity."

(78) *wanadai kuwa mahiTAji* ya umeme *yamewazidi nguvu.*

A part of an individual semantic constituent, ***ya umeme*** in (78) is [-focus]. The whole Argument is, of course, *mahitaji ya umeme* - "demand for electricity". But, since **umeme** - "electricity" has been mentioned frequently, it is part of the shared background. *Demand for* it is now brought into the picture for the first time; it is therefore [+focus]. This makes the constituent ***mahitaji ya umeme***

partly [+focus] and partly [-focus]. A similar thing can also be observed in (79B), where *sehemu* is [-focus] while the remainder of the constituent ***sehemu yenye matunda*** ("part-containing-fruits") is [+focus].

(79) A sehemu zote zina ukubwa uliofanana?
part all they-have size it-be-similar
"are all the parts of similar size?"

B sehemu *yenye matunda ni kubwa kuliko zote.*
part it-has fruits is big than all
"the part with the fruits is the biggest."

Focus itself is all-or-none. That is, if any stretch of a given focus domain is marked [+focus] it is focused not just to a certain degree, but totally. Likewise for a stretch marked [-focus]. The bits of information in the focus domain are either focused or not focused. But that does not, of course, imply that the whole focus domain or utterance must all be either focused or not focused (as demonstrated by the examples just discussed). In the light of this, [+focus] and [-focus] will be assigned to whole individual constituents (A, P, C, as Gussenhoven does) in an utterance; bearing in mind that a part of a constituent may be [+focus] while the remainder of it is [-focus].

Whatever the nature of the distribution of [+focus] and [-focus] in a given utterance, it is the *nucleus* or ***nuclear word*** that forms the focal centre or headword of the speaker's contribution. It is therefore to this important central core in the utterance that the discussion must now proceed.

2.4.2. Focus and the Nucleus

In each intonation group, and in particular, within the [+focus] information, the speaker locates an important signal to facilitate the decoding of his message by the hearer or addressee. This refers, it will be recalled, to what Halliday calls the ***tonic*** or tonic syllable. We begin by juxtaposing that vital clue, the nucleus, with Halliday's notion of tonic.

In the literature, the nucleus is generally seen to refer to that part of the intonation group which contains the intonation centre, or the location of maximal pitch change - movement up or down in a given intonation group. In Hallidayan terms this means the tonic syllable in the tonic segment; for Chomsky and Halle it refers to [1 stress].

Since the discussion in this Chapter is centrally concerned with focused information in the intonation group and not directly with the pitch movement type used to convey it, *nucleus* is to be understood as the focal or concentration point in the [+focus] information.

Halliday's notion of tonic refers both to the most important point in the tone group and also to the prosodic realization of the prominence of the syllable of the word occupying that point. To make matters a degree more confusing, tonic is also used to mean the tonic segment - as opposed to the pretonic segment. To overcome any terminological confusion, therefore, we shall adopt the terms *nuclear word, nuclear accent, nuclear syllable,* and *nuclear tone.*

Nucleus must be understood as referring to the information communicated in the intonation group. Whenever we use the term *nucleus,* it will refer to the crucially important *word* in the utterance, which is communicatively and interactionally central to the speaker's contribution. It is the headword that the speaker would undoubtedly pick out as the crux if he were required to limit his

utterance to a telegraphic minimum number of words. There is therefore a sense in which *nucleus* also refers to more than one word or to a constituent, such as ***mbio nyingi*** - "race-many" - in **Juma alishinda MBIO NYINGI** - "Juma-won-races-many" - (as a response to **Juma alishinda nini?** - "what did Juma win?"). Only ***mbio nyingi*** would adequately stand in place of the fuller response (*mbio* on its own would not; neither would *nyingi).* It would therefore be appropriate to refer to linguistic stretches like ***mbio nyingi*** (in appropriate contexts) as *nuclear constituents.* Further examples can be seen in (80 and 81) below. Within the nuclear constituent we can then speak of ***nuclear word,*** location of the *nuclear syllable;* in the above case ***nyingi.***

The nuclear word is made to stand out prominently from the rest of the message in the utterance by the nuclear accent (further detailed discussion on the nuclear accent in a later Section). But the locus of such nuclear prominence is to be found specifically on the nuclear syllable in the nuclear word. The nuclear tone is used to convey the nuclear prominence prosodically. Although centred on the nuclear syllable itself, the nuclear tone may (as demonstrated for Swahili later on in Chapter 3) also affect one or more preceding syllables.

(80) A i'm sure you know what i mean.

B i know *exACTly* what you mean.

(81) A umerudi lini?

you-have-return when

"when did you get back?"

B nilirudi *siku ya jumaTAtu.*
I-returned day of Monday

"I returned on Monday."

Of course, in referring to the information content of an intonation group, it makes little sense to speak only of syllables such as -XACT- or -TA- or -PI-, which are the syllables that nucleus would normally refer to in the traditional usage, such as Halliday's. To stress the point, it is true that nucleus would - even in our usage - be appropriate if used for syllables like FACT, THAT, YES, etc., which are perfectly meaningful English monosyllables that are accentable.

But, in Swahili, apart from a handful of cases (eg ***je, la, si, lo),*** monosyllabic words are not stressable - and, therefore, not accentable in a discourse context. Which means that they are rarely potential candidates for nuclear status. Monosyllabic words in Swahili do not, as a rule, play any significant nuclear role, as they do in English. This is another reason why it makes better sense to speak of nuclear word rather than plain nucleus in contexts such as this. In (69B) the nuclear word is **exACTly**, and **jumaTAtu** and **iliyoPIta** in (82B) and (82B1), respectively. Of course, we can isolate nuclear or tonic syllables (as indicated by CAPITALS in the above) in each one of those examples.

The nuclear word, communicatively speaking, sometimes must go together with one other word or more for it to make appropriate semantic and pragmatic sense in the context. Thus, in B's telegraphic responses below, (82B) is both acceptable and appropriate, so is B1; but B2 is not.

In some sense, therefore, *nucleus* also refers to more than one word or to a constituent. such as ***mbio nyingi*** - "race-many" - in **Juma alishinda MBIO NYINGI** - "Juma-won-races-many" - (as a response to **Juma alishinda nini?** - "what did Juma win?"). Only ***mbio nyingi*** would adequately stand in place of the fuller response (*mbio* on its own would not; neither would *nyingi*). It would therefore be appropriate to refer to linguistic stretches like ***mbio nyingi*** (in appropriate contexts) as *nuclear constituents*. Within the nuclear constituent we can then speak of ***nuclear word,*** location of the *nuclear syllable;* in the above case ***nyingi***.

(82) A ulirudi lini?
you-returned when
"when did you return?"

B *jumaTAtu.*
Monday
"on Monday."

B1 *jumatatu iliyoPIta.*
Monday it-pst-that-pass
"last Monday."

B2 * *iliyoPIta.*
it-pst-that-pass
"the last one."

The reason is obvious: both JUMATATU and JUMATATU ILIYOPITA constitute semantic constituents. But *ILIYOPITA in B2 is only a part of the semantic constituent that provides an acceptable minimal response to (82A). Only the full response (82B1) or the syntactic head (82B) will do. As a response to (83A), (83B) is, however, perfectly acceptable. The reason is obvious: since the syntactic head is now provided by the question, it can be regarded as part of the presupposition.

(83) A ulirudi jumatatu ipi?
you-returned Monday which

"which Monday did you return?"

B *iliyoPIta.*
it-pst-that-pass

"the last one."

B1 nilirudi siku ya jumata tu *iliyoPIta.*
I-returned day of Monday it-that-passed
"I returned last Monday."

The nuclear word is intimately linked with focused information. After all, what is focused is that bit or those bits of information which the speaker wishes to be regarded as his contribution to the discourse at that stage. From the speaker's perspective, [+focus] contrasts this part of the utterance from the rest of the message, which he considers presupposed or is already in the

background.

To signal this orchestration to the hearer, the speaker will depend heavily upon the nucleus as a crucial signal to enable the hearer to decode the message and its structure. In order to also decode the fuller mood and attitudinal context of the message, however, the hearer will, in addition, require the accompanying prosodies of the intonation group. In the group, the speaker will accent the nuclear word in a special way, making it stand out prominently from the rest of the utterance.

The nuclear word is, therefore, the single word which (taken together with any other essential parts of the semantic constituent in which it is located) the speaker would be obliged to pick out to represent his entire message if forced to utter only a telegraphic abbreviation of it. Such a telegraphic message would not only come from the [+focus] chunks, such as *mwaka mzima sasa*, *Kwanza tulizungumza na kituo, unaanzia kwenye kituo* or *siku ya Jumatatu iliyopita*. It would also be certain to include the crux of the intonation group, its nuclear core. This would give obligatory abbreviations such as *Jumatatu iliyoPIta* for *siku ya Jumatatu iliyoPIta*.

From the foregoing, it is abundantly clear the nuclear word and [+focus] are inseparable twins within the intonation group. It is in light of this that we shall now move on to consider the nucleus in Swahili data.

2.4.3. Nuclear word and scope of focus

The series of examples in (61) which were used in the discussion of focus and focus domains in Swahili provide a good starting point. We relist them in (84), in order this time round to mark out the nuclear word in each focus domain (for glosses see Appendix III). In each case *italics* indicate [+focus] and capitals indicate the nuclear syllable in the nuclear word.

(84) mambo yalikuwaje? *JUma ali'shinda mbio zake* ZO *te.*

juma alifanya vizuri? juma *aliSHInda mbio zake* ZO *te.*

juma alishinda? JUma ali'shinda *mbio ZAke* ZO *te.*

juma alishinda mbio zipi? JUma ali'shinda mbio *zake ZOte.*

juma alishinda mbio zake? JUma ali'shinda mbio zake *ZOte.*

juma alishinda mbio zake zote? *NDIyo,* juma alishinda mbio zake zote.

Given the background assumed to be already shared between the interlocutors (the questioner is aware of his friend having been to the athletics meeting where their mutual friend competed), it is easy to see the reason for the location of each nuclear word in the focus domain. In the first response, the information is all new and the whole intonation group is therefore [+focus]. The unmarked location for the nuclear word here is the first semantic constituent. We, therefore, get *JUMA* as the obvious choice. But the initial semantic constituent of an all-new focus domain need not be a Subject Argument, which JUMA happens to be. We only have to look at (85B), (86B) and (87B) to see that an Object Argument, a Condition or a Predicate behaves in exactly the same way.

(85) A mbona kahawa nyeusi?

why-is-it-that coffee black

"why (are we having) black coffee?"

B *ḥakuLEta maziwa leo.*

he-didn't-bring milk today

"he/she didn't bring the milk today."

B1 *hakuLEta leo maziwa.*

B2 *maZIwa hakuleta leo.*

B3 *maZIwa leo hakuleta.*

B4 *LEo hakuleta maziwa.*

B5 *LEo maziwa hakuleta.*

(86) A kwa nini unamkasirikia?

for why you-'re-him-angry-with

"why are you angry with him?"

B *jana uSIku kalewa tena.*

yesterday night he-'s-drunk again

"last night he was drunk again."

B1 *kalewa TEna jana usiku.*

(87) A usafiri bado mzuri?

travelling still good

"is the transport system still good?"

B *mabasi MEngi hatuyaoni siku hizi.*

buses many we-don't-see day these

"many buses we don't see these days."

B1 *hatuyaOni mabasi mengi siku hizi.*

B2 *hatuyaOni siku hizi mabasi mengi.*

B3 *siku HIzi hatuyaoni mabasi mengi.*

B4 *siku HIzi mabasi mengi hatuyaoni.*

In an all-new focus domain, the norm is for the nuclear word to be located in the Constituent - be it Argument (whether Subject or Object), Predicate or Condition - syntactically located in initial position in the focus domain. The result is *JUma* - Subject Argument in (61); *MEngi* - in fronted Object Argument of (87B); *hakuLEta* - Predicate in (85B), and *uSIku* - in Condition of (86B). If there are two or more words in the leftmost constituent in an all-new focus domain, the rightmost one of these becomes the nuclear word. As examples of this we have (82B) and (87B).

If we had to classify Swahili typologically, we would say its basic word order is SVO(A), as in *(yeye) hakuleta maziwa leo* - "he-didn't- bring-milk-today".[10] The overt Subject (yeye) is frequently omitted (as in (86), since it is signalled by the vowel of the negative verbal prefix (***ha ***). Word order flexibility produces the syntactically well formed examples B - B5 in (85) and those in (86) and (87). It is interesting to note in particular the mobility of the Condition (eg *leo* in (85)). It is therefore generally possible to shift the designated nuclear constituent to initial position, where it is then realized by a neutral nuclear tone (see Chapter 3 for details). When such fronting would produce a syntactic sequence that is not well formed, the nuclear word is realized by a marked nuclear tone.

Turning back to the responses in (84), given the reduced scope of focus (resulting from the expansion of the presupposition by the question), the

nuclear word is now to be found in the chunk *alishinda mbio zake zote.* And the orientation of the question guides the nuclear word to be located on Predicate: *aliSHInda.*

But P is also, of course, the leftmost [+focus] constituent in the domain. As the presupposition widens, the scope of focus is limited to the Object Argument - *mbio zake zote* - or parts thereof. Consequently, the nuclear word position is also limited to that constituent. But, in the final response of (84), since there is now maximal presupposition, both the focus and nuclear word are squeezed out onto the polarity indicator, *NDIYO* - "yes".

Clearly, the placement of the semantic constituent (ie the nuclear constituent) which contains the nuclear word is determined by semantic, pragmatic and contextual constraints relevant to the discourse. Now, within the individual semantic constituent containing the nuclear word, the neutral placement of the nuclear word is predictable since, as we have just seen, it must fall on the rightmost word in the nuclear constituent of the focus domain. Taking the third, fourth and fifth responses of (84), as (88) illustrates, the options are not that many.

(88) *mbio 'zake ZOte*

race his all

"all HIS races."

mbio zake ZOte

race his all

"ALL his races."

* *MBIo zake zote*

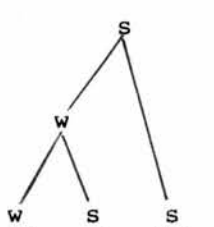
race his all

"all his RACEs."

The neutral location of the nuclear accent within the nuclear constituent is the rightmost word. Given the Swahili word order, it is the rightmost modifier that is the neutral nuclear word. (89) represents the situation in the second example in (88). The whole Argument - *mbio zake ZOte* - is focused.

The nuclear accent falls on the rightmost word in the constituent. The tree in (89) is based on metrical theory, with s and w representing weak and strong nodes. It can be seen that the constituents have a relationship of strong (s) to weak (w).

(89)



mbio zake ZOte

Similarly, in (86B) and (87B), the options are likewise very much restricted within the nuclear constituent, as shown in (90) and (91), respectively. In each case, the focus domain consists only of one constituent - Condition in (90) and Argument in (91). Since each constituent is made up only of two words, one of them will inevitably become the nuclear word and bear the nuclear accent.

(90) *jana uSIku*

"yesterday NIGHT."

* *JAna usiku*

"YESterday night."

(91) *mabasi MEngi*

buses many

"MANy buses."

* *ma'basi MEngi*

maBAsi 'mengi

"many BUSes."

Those examples show that within the nuclear constituent the unmarked location of the nuclear word is the rightmost position. It may or may not be the rightmost word in the entire focus domain. It is, however, essential to stress unmarked here. This is because, as evidenced by (92), a marked nuclear location will depart from the *rightmost* rule.

(92) sehemu kama *ya katikati ni TUpu kabisa.*

part like of middle is empty completely

"the centre, for example, is completely EMPty."

(93) [*TUpu ka'bisa*]

empty completely

"completely EMPty."

'tupu kaBIsa

"comPLETEly empty."

The neutral location for the nuclear word of the intonation group in (92) is the second word of the Condition in the [+focus] information, namely, KABISA, (93). But, because of the special emphasis involved, nuclear prominence is shifted from its neutral rightmost position in the constituent, onto the constituent head, *TUpu* – "empty".

Conditions such as ***sasa*** – "now" – rarely attract nuclear prominence, except in special emphasis. Thus, in (94), the nuclear word is located in the Argument preceding the Condition. And, within that Argument, it is the rightmost word *mZIma*.

(94) A tatizo hilo limekuwapo kwa muda gani?

problem that it's-been- for time what

"how long have you faced that problem?"

B ni *mwaka mZIma sasa.*

is year whole now

"it's now a WHOLE year."

(95) A Shambani mwako kuna matunda aina gani?

farm-in yours there- be fruit type what

"can I get any kind of fruit in your farm?"

B *nimepanda aina tatu TU.*

I-have-plant kind three only

"I've planted only three kinds."

But it is perfectly natural for the nucleus to be located on the Condition even if it is to the right of an Argument, provided there is a marked or special emphasis involved. Example (95) above illustrates this (notice that **TU** is one of the rare instances of lexical monosyllables in Swahili). The neutral location of the nucleus is on the rightmost word of the Argument **aina tatu**, so that (96) would be in contrast with (95B) only due to their difference in nuclear word.

(96) *nimepanda aina TAtu tu.*

"I've planted only THREE types."

The negation word in the utterance has a special place so far as nuclear prominence is concerned. This is because it signifies polarity. When there is a Negation in the focused information in a given intonation group, almost invariably it attracts nuclear prominence. The negative copula takes two forms in Swahili: one bi- and the other monosyllabic, SIO and SI, respectively. Both forms are accentable. SI is one of a very few monosyllabic words in Swahili that can potentially become a nuclear word. Consider (97) and (98).

(97) A mjomba wako ni polisi?
uncle your is policeman
"is your uncle a policeman?"

B mjomba wangu *SI* polisi.
uncle my is-not policeman
"my uncle is NOT a policeman."

(98) A watoto wao huniomba fedha kila mara.
children their they-me-beg money every time
"their children are always begging me for money."

B *SI vizuri kuruhusu* watoto kuombaomba.
is-not good to-allow children to-beg
"it is not good to allow children to beg."

What we have in (97) is a clear case of polarity focus. But the negative word tends to attract nuclear prominence even when [+focus] is assigned to the bigger chunk that includes it. This is evidenced by (98B). Many other examples can be adduced for the location of nuclear prominence on the negation. As can be seen in (100) and (102), negation in Swahili can also be achieved through morphological affixing on the Predicate.

(99) *hata Slo* mengi *sana.*

never not many very

"no, NOT very many."

(100) *hawaWEzi kutupa* umeme *wa kutosha.*

they-can't give-us power of enough

"they CAN'T supply us with enough power."

(101) *Slo* sehemu nyingi *sana.*

not places many very

"NOT very many places."

(102) *hawaWEzi kutupa* umeme.

"they-CAN'T give-us power

It is evident from the foregoing discussion and supporting data that focus distribution is logically and noncontroversially related to the location of the nuclear word. The latter will be found within the [+focus] information. The question is within the [+focus] information, how is the location of the nuclear accent determined? It is to this that we turn our attention in the next Section.

2.5. Subordination of prominence

Gussenhoven's accent placement rule for English, ***SAAR,*** (1983:391) contains the condition that, in a given sequence of Argument-Predicate or Predicate-Argument - or with a Condition separating them, the accent goes to

the Argument. Thus the accent goes to A, DOG'S, in both (103) where the constituent sequence is A P and (104) where it is A P A.

(103) our DOG'S disappeared.

(104) john beats MARy.

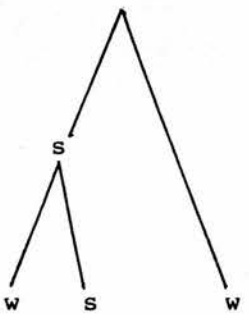
It is clear that in Gussenhoven's account it is the linear sequencing of the constituents which is the relevant factor in the way accent domains are formed. This does not, however, explain why the accent should go to the Argument in sequences such as those in (103), (104) and (105).

(105) he said the prinCESS had laughed.

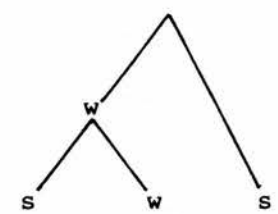
Rather than focussing attention on the linear sequencing of constituents (eg AP or PA), the emphasis should be on the relationship between such adjacent constituents in relation to the single accent they share. Ladd (1983:66), therefore, raises an interesting notion of linking accent domain formation to Liberman and Prince's (1977) hierarchical metrical structure. Ladd rightly suggests that the domain formation in circumstances such as (103), (104) and (105) can be better accounted for by reference to hierarchical relations between the semantic constituents.

> Domain formation is not (as Gussenhoven would have it) linear concatenation, but the joining of two sister constituents in a hierarchical structure in such a way that one of the two *must* be relatively stronger than the other.

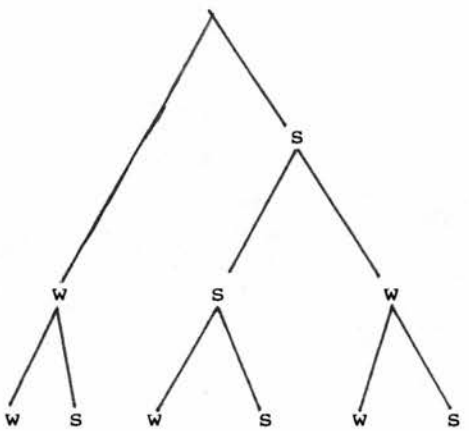
Reinterpreted in that light, accent domain formation in Gussenhoven's examples in (103), (104) and (105) would give us (106), (107) and (108). The assignment of strong-weak relations between and within the constituents shows clearly why the accent is on DOG'S, MARy and prinCESS.



(106) our DOG'S disappeared.



(107) john beats MARy.



(108) he said the prinCESS had laughed.

In (107) the first A (John) is 'strong', P is 'weak' and the second A (Mary) 'strong'. P combines with the A to its left to form a 'weak' larger constituent, *john beats*, which then combines with the stronger constituent, **MARy**.

This is an appropriate starting point for the discussion on the placement of nuclear and other accents in the intonation groups of Swahili utterances, which is the point of this Section. The analysis is based upon and applies Ladd's proposal that accent *domain formation necessarily involves the subordination of one element to the other* (1983:66).

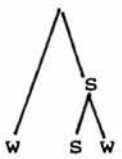
2.5.1. Levels of prominence

Prominence in Swahili is best seen to be at three levels: word level, constituent level, and utterance or intonation group level. Those three levels are useful in that they enable us to distinguish between lexical or word stress, constituent accent and nuclear accent. Of course, an intonation group may consist of a single word or constituent.

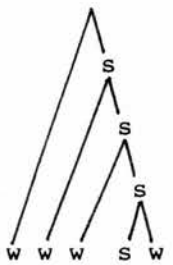
In the citation form of a word, the weak or unstressed syllables may be

considered subordinated to the strong or stressed syllable (normally the last-but-one syllable in Swahili words). Thus, in words like *shati* - "shirt", *mashati* - "shirts" and *alinunua* - "he/she bought", such subordination relations could be clearly represented diagrammatically in the fashion of metrical tree structures (eg Liberman & Prince 1977) by (109), (110) and (111), respectively.

(109) 'shati



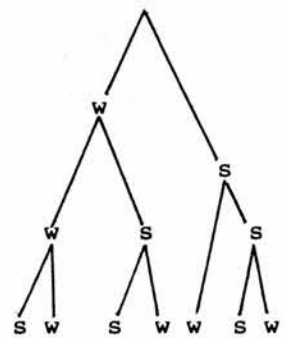
(110) ma'shati



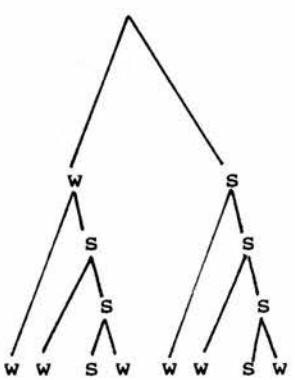
(111) alinu'nu a

The constituent accent is determined by the subordination of the individual word-stress of each of the words in the constituent except one. The neutral

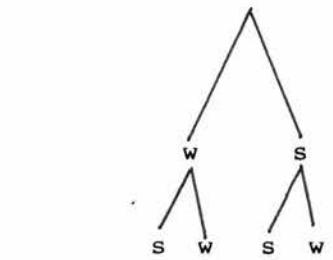
situation is for the rightmost word-stress in a constituent to become manifested as the constituent accent. We can illustrate this by using the semantic constituents in (112) - (115). When the constituent constists of only one word, of course, no problems arise in selecting where to locate the accent.



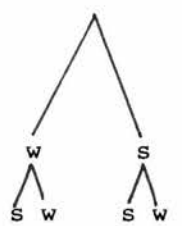
(112) 'baba 'yangu m'dogo
father my small



(113) ali'weza kunu'nu a
was-able to-buy



(114) nyumba Mpya
house new



(115) 'wiki 'jana
week yesterday

It will be noted that, for constituents like those in (112) – (115), the strong node – that is, the constituent accent, is on the last or *rightmost* accentable syllable in the constituent. The remaining words in the constituent have their word-stresses subordinated to the prominence of the rightmost one. The rest are, therefore, either weakened considerably – thus retaining only a reduced relative prominence, or are altogether suppressed. The constituent accent is to be found on the s-node not dominated by any higher w-node on the right branch of each tree in (112) – (115), that is the DTE (designated terminal element) of Liberman and Prince (1967).

Likewise, the accents that speakers use for communicative purposes in their

utterances are determined by subordination of lower level prominence, that is, lexical or word-stresses and constituent accents.

Phonetically, the different levels of prominence and subordination of lower-level prominence to higher-level prominence are to be seen in the following terms. The nuclear accent is the primary accent, the location of the greatest or most noticeable pitch accent in the intonation group. Constituent accents are therefore locations of secondary pitch prominence within the intonation group. Whereas there can be only one nuclear or primary pitch prominence in a given intonation group, there may be two or more secondary or constituent accents in it. Any locations of minor prominence in the intonation group therefore constitute a tertiary level of prominence and will be considered a *stress*. There will usually also be a greater or smaller number of syllables in the intonation group where there is no pitch prominence.

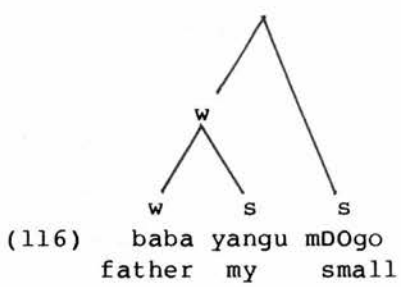
To appreciate this more fully, it is necessary to look in some detail at how *accent domains* are formed in Swahili.

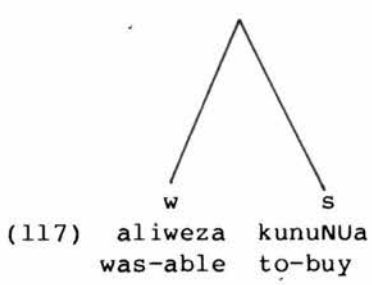
2.5.2. Accent domains

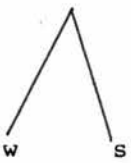
The placement of accent in a given utterance is achieved in stages: *focus* distribution, accent domain formation and the placement of accents. Since focus and focus domains have already been dealt with in Chapter 2, we shall restrict consideration here to accent domain formation and the placement of constituent accents and nuclear accents. Focus domains will be assumed and will simply be marked using our *italics* convention. Within any focus domain, one or more semantic constituents will constitute a single accent domain, consisting of one and only one accent.

Accent domain formation may be achieved in one of two ways. Accent domains may be marked or unmarked. In an unmarked accent domain, a single

whole constituent, Argument, Predicate, Condition, will be assigned one constituent accent. The accent is structurally and predictably located on the *rightmost* word in the domain. Given Swahili word-order, the structure of a constituent with two or more words (eg 116 - 119) will be Head-Modifier-Modifier ... in Arguments and Conditions. This is because, in Swahili, modifiers like Adjectives occur after the Head. It does not matter how long the constituent might be. Thus to (116) - (119) could be added others such as **nyumba mpya nzuri sana** - house-new-beatiful-very ("a very beatiful new house"), **wananchi wetu wengi mno wasiojua kusoma na kuandika** - citizens-our-many-too-[who-do-not-know]-[to-read]- and-[to-write] ("too many of our illiterate citizens").







(118) nyumba Mpya

(119) wiki JAna

When there is no Premodifier, the constituent accent neutrally falls on the rightmost modifier. When the constituent structure is Premodifier–Head, the constituent accent will be on the Head of the constituent. But, in a Premodifier–Head–Modifier sequence, the constituent accent goes on the Modifier. Examples of H–M(–M) constituents are is (116), (118) and (119).

Marked accent domain formation occurs when two or more constituents combine to form a single accent domain (cf Ladd 1983:166f). Candidates for such combination are Predicates with a following Object Argument (122B); Predicate with Condition, or Object Argument with Condition. In single–word constituents, as in (122) B1, the Predicate may combine with both the Object Argument and Condition to form a single constituent.

(120) A Juma alisema atarudi lini?

he-said he-'ll return when

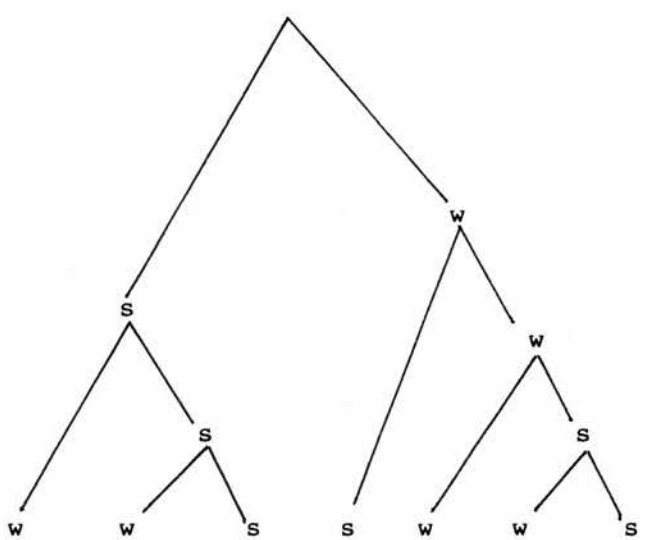
"did Juma say when he'll return?"

B [atarudi *ma'pema asuBUhi*] [*SIku ya Jumapili i'jayo.*]

he'll-return early morning day of Sunday it-come-that

"he returns early next Sunday morning."

The nuclear accent is located on the [+focus] Condition in the first accent domain. In the second accent domain, the constituent accent is on the initial accentable word, *'SIku.*



(121) atarudi mapema asuBUhi SIku ya jumapili ijayo

But, as evidence that Swahili does not permit long unaccented stretches of speech (as English does), there are also two word stresses - on *ma'pema* and *'jana.*

(122) A unafuraha sana leo.

you-have- very today
happiness

"you're very happy today."

B [*baba yangu mDOgo*] [*aliweza kunu* NU *a*]

"my younger uncle succeeded in buying

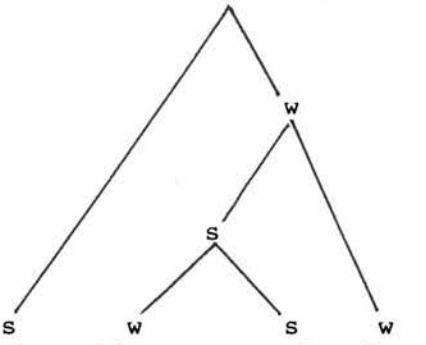
[*nyumba* M *pya*] [*wiki* JA *na*]

a new house last week."

B1 [*BAba*] [*alinunua* NYU *mba jana*]

"father bought a/the house yesterday."

In (122B)the three constituent accents are located on the rightmost accentable word (which happens to be also the last in the constituent) of each of the accent domains. The nuclear accent is the constituent accent of the first accent domain, *mDOgo*. To make the Object Argument the nuclear word, there are two possibilities: it can remain in its neutral syntactic location and be realized by a marked nuclear tone; or it can be moved to initial position and be realized by an unmarked nuclear tone. The same would apply for (122) B2.



(122) B2 BAba alinunua NYUmba jana

In longer accent domains, like the second where a P and A combine to form one accent domain, a word stress is to be expected to occur in addition to the constituent accent. In this case it is on the rightmost word in the P, *kunu'nua.*

The constituent accents are represented in (120) and (122) by small CAPitalization of the syllable carrying the constituent accent. The constituent accent occurs on the stressed syllable of one of the words (where there are two or more words in the constituents).

The placement of accents in marked accent domains is not so predictable since it largely depends upon the pragmatic and contextual factors relevant to the utterance concerned. It is, therefore, not possible to state any principle according to which the locations of accents in such accent domains may be correctly predicted in all cases. The accent locations will vary with such factors as *narrow focus.* Marked accent domains can be illustrated by example (123).

(123) A juma alisema ataondoka jumapili ijayo?

he-said he-leaves Sunday it-that-comes

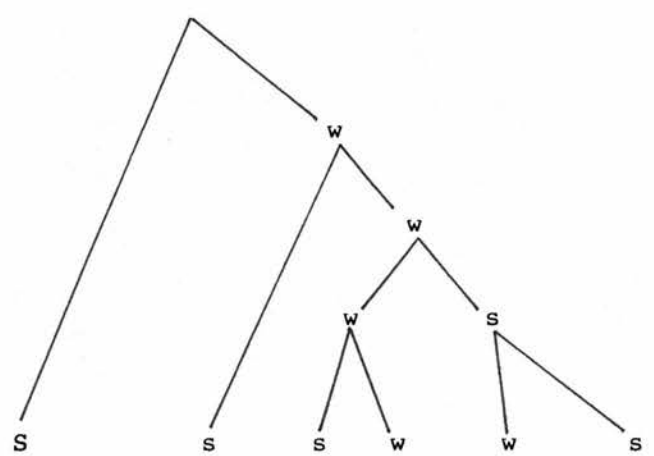
"did Juma say he would leave next Sunday?"

B [*ataRUdi*] [*ma* PE*ma* 'siku ya jumapili iJAyo]

he-'ll- early day of Sunday it-that-comes
return

"he'll return early next Sunday."

The question in A assumes two things: that Juma is *leaving*, and that the *day* for his departure has also been specified. His question specifically seeks confirmation as to whether Juma had said that. But B's answer accepts only one of A's assumptions: that the day in question is, indeed, the following Sunday. But he contradicts the assumption that what Juma will do on that day is *leave*. His counterassertion is that, in fact, Juma is *returning* that day – and *early*. Only the counterassertion and 'early' are [+focus]. But both parts of B's response do constitute separate accent domains (123) B1.



(123) B1 [*ataRUdi*] [*ma* PE*ma* 'siku ya jumapili iJAyo]

The main accents in the two accent domains are on P, *ataRUdi* and *ma* PE*ma*, of which the Predicate takes the nuclear accent, to convey the contrast with *ataondoka* unequivocally. Once again the unacceptability of long unaccented

stretches is shown by the two word stresses in the second, longer accent domain.

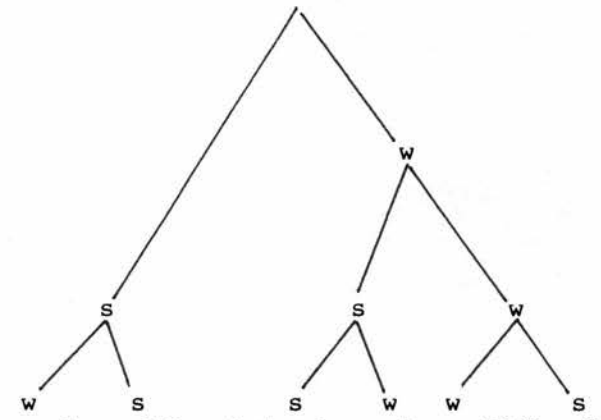
Suppose that (123B) were an answer to the question *Juma atarudi lini ?* "when is Juma coming back?" The accent domain formation would be as indicated in (124), with two accent domains – the first consisting of P and the C *mapema ;* the second would contain the remainder of the response. The accent of the first domain is on the C and that of the second is on *siku,* the leftmost in the accent domain. In the first domain the Condition takes the accent because P is [–focus]. In the second, because A and C are both [+focus], A, the leftmost constituent, takes precedence over the C for the accent location.

(124) [atarudi *maPEma*] [SI*ku ya jumapili i'jayo].*

he-returns early day of Sunday next

"he comes back EARLy next Sunday."

Of the two constituent accents, the leftmost one takes the nuclear prominence of the whole intonation group.



(124) B [atarudi *maPEma*] [SI*ku ya jumapili i'jayo]*

In contrast to (120B) and (122B), we have in (124) a case in which Predicate is not only not a part of the constituent following it, but also constitutes an accent domain of its own, attracting the nuclear accent in the process. It will be seen that the Predicate [*ataRUdi*] – "he'll return" – is a separate accent domain from [*mapema* siku ya Jumapili i*jayo*] – "early next Sunday".

Other examples of this sort, where the accent domain is marked, can be easily found in spoken discourse; (125B) is just one of them. The whole utterance consists of a single accent domain with the nuclear accent on ***zaIdi*** – "more".

(125) A wapi karibu zaidi: ulaya au amerika?
where near more Europe or America

"which is nearer: Europe or America?"

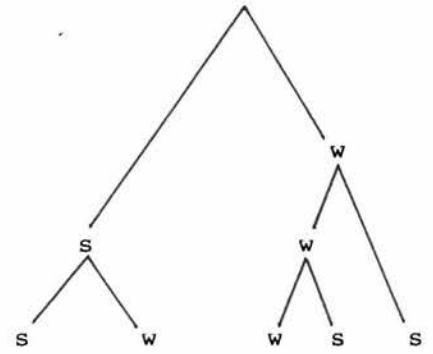
B [ameRIka ni *mbali* zaIdi]
America is far more

"America is much farther."

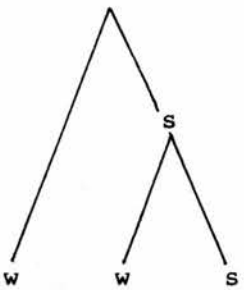
The intonation group in (125B), where the nuclear accent is located on the rightmost constituent, will be realized by a marked pattern (see Chapter 3), with a Fall nuclear tone followed by a long obligatory tail.

The notion of combined constituents can also be applied in demonstrating the formation of focus domains. As shown in an earlier Section of this Chapter, focus distribution may be such that (a) the whole utterance is [+focus], (b) only one part of the utterance is [+focus] while the remainder is [-focus], or (c) parts of the utterance that are [+focus] may be separated by parts that are [-focus]. These can be represented in terms of subordination as shown below.

(126) is a graphic illustration of focus distribution in a domain with full focus. It represents the hierarchical structure of the relations between the [+focus] constituents within the intonation group. ***JUma,*** which is the Subject Argument designated as the nuclear constituent (and nuclear word), is the strongest. After it, the Predicate (*alishinda*) is weaker than the Object Argument to its right. The representation is based on the metrical theory of Liberman & Prince (1977).

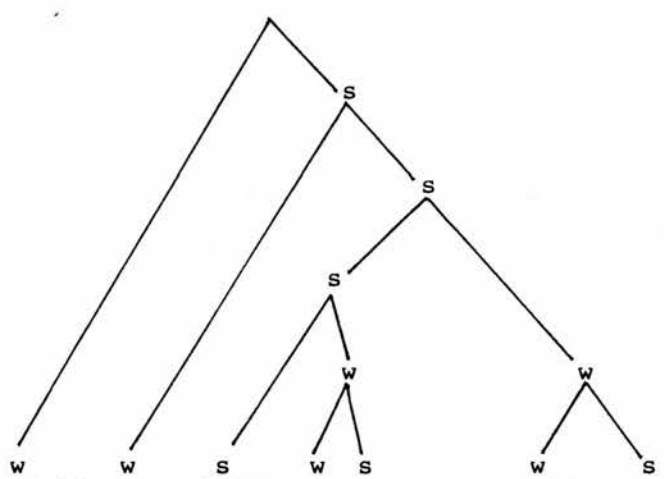


(126) *JUma alishinda mbio zake zote*



(127) tumejaribu *mambo maWIli*

(128) below illustrates relations between the constituents of an intonation group with two [+focus] stretches separated by a [−focus] stretch.



(128) *wanadai kuwa mahiTAji* ya umeme *yamewazidi* NGU *vu*

2.6. Special Cases

2.6.1. Accent and negation

When an utterance contains a negation, the nuclear accent location is predictable. In Swahili utterances negation can be realised lexically by such

words as SI, SIO/SIYO, SIVYO, etc.. It can also surface as a negative morpheme affixed to another word, eg. ASIYE,HAPANA, PASIPO (the negative morpheme is underlined in each case, cf their positive counterparts: *aliye, pana, palipo*).

In utterances containing such negative words, or words containing negative morphemes, the nuclear accent will be located on the negative word or the word containing the negative morpheme. Examples (129) and (130) will help to illustrate this.

(129) [BA*ba*] [SI] [*po* LI*si*]

father is-not police

"father is not a policeman."

[BA*ba*] [SIo] [*po* LI*si*]

father is not policeman

"father is NOT a policeman."

* [BA*ba*] [NI] [*po*LI*si*]

father is policeman

"father IS a policeman."

(130) [JO*ni*] [*alikuja Blla*] [*taa* RI*fa*]

John he-came without information

"John came withOUT an appointment."

* [JO*ni*] [*alikuja KWA*] [*taa'rifa*]

cf. [*john came BY appointment*]

JO*ni alikuja kwa taaRIfa.*

The sense of *John came BY appointment* is in Swahili communicable either by lexical substitution (eg *'Joni alikuja* ***ba'ada ya ku'toa*** *taaRIfa*) or by prosodic markedness on (130) - *Joni alikuja kwa taaRIfa*. If the former is the option selected, then the speaker might say *Joni alikuja baAda ya kufanya mihadi* - "John came AFter making an appointment"; MIHADI being a relatively recent Arabic loanword meaning 'appointment'. If the intonational option is selected, then the speaker would use the verbal form with *kwa*. But the nuclear word would be *taaRIfa*. This marked nuclear location would then be realized by a marked tone, where the nuclear tone would be followed by a LOW LONG OBLIGATORY TAIL (see Chapter 3).

To underscore the difference between the behaviour of such non-lexical items as prepositions in English and Swahili, we add two further examples to the above English example. (131) and (123) are heard dozens of times daily from the traffic robots at two pedestrian crossings in Edinburgh's West End. Presumably, they are specifically meant to assist blind pedestrians. The first works with the traffic lights on the outgoing lane from Princes Street; the second with the lights on the incoming lane.

(131) [traffic coming + FROM princes 'street] + [has

been 'signalled + to STOP]

(132) [traffic going + TO princes 'street] + [has
been 'signalled + to STOP]

For the pedestrian waiting on the traffic island between the two lanes, the DIRECTION - to or from - of the traffic being signalled to STOP (as opposed to GO) matters. Hence only the prepositions and contrast are in focus. Although there are word stresses - not unlike the constituent accents in Swahili - the nuclear accents fall on the prepositions and STOP. In Gussenhoven's terms, there is therefore a classic instance of minimal focus on the prepositions. Everything else is given by the context: that the subject is the traffic; its origin or destination. The most crucial thing is WHICH of the two lanes is now safe for the pedestrian to cross.

(133) [*waTO to*] [*wasiteMBEe*] [*u'siku*]

children they-not-walk night

"children MUSTn't walk about at night."

(134) [*waTOto*] [*wateMBEe u'siku*]

children they-walk night

"let (the) CHILDren walk about at night."

cf. [*waTO to watembee uSIku*]

In juxtaposition with the corresponding affirmatives, the contrast in accent

locations becomes quite explicit. The negative word SI, although monosyllabic, is accentable while its positive counterpart, NI, is not. Consequently, the former takes not only the constituent accent in its accent domain but also the nuclear prominence of the whole utterance. But an accent of any sort on *ni* would be totally unacceptable. Similarly, in (131), it is BILA – the negative word – which has the nuclear accent, while the structurally parallel monosyllabic KWA is not. Finally, (133) is perhaps the starkest illustration of the point.

In the negative utterance, the P – which contains the negative affix (–SI–) – is the accent location, whereas, in the corresponding affirmative (135), the accent falls elsewhere, namely, on the Subject Argument. Of course, the unmarked accent location for the affirmative corresponding to (129) would be – just as in the affirmative example of (133) – the Subject Argument. That corresponding to (130) would have the constituent accent of its second accent domain located on the Argument (ie Subject Complement). This is shown in (135) and (136).

(135) [*BAba*] [*ni poɭisi*]

father is policeman

"FATHer is a policeman."

(136) [*JOni*] [*alikuja kwa taaʀifa*]

John he-pst-come by appointment

"JOHN came by appointment."

2.6.2. Accents in interrogatives and imperatives

The location of nuclear accent is also predictable in certain other utterance types, such as questions, imperatives, interjections and utterances with compound structures. Let us look first of all at interrogatives.

(137) [BA*ba*] [*yupo WApi* ?]

father he-is-present where

"WHERE's father?"

cf a. [yupo WApi BAba ?]

he's-present where father

"where's FATHer?"

b. [where's FATHer ?]

(138) [*kiTAbu*] [*kimepasuliwa na NAni* ?]

book it-has-rip-been by who

"who has the book been ripped by?"

cf a. [NA*ni kapasua kiTAbu* ?]

who has-rip book

"who's ripped the BOOK?"

b. *NAni kapasua ki* TA*bu* ?

"WHO's ripped the book?"

c. NA*ni kapaSUa ki*TA*bu* ?

"who's RIPPED the book?"

d. *who's ripped the BOOK* ?

e. *WHO's ripped the book* ?

f. *who's RIPPED the book* ?

The first type of question is that which contains an explicit question word. Such questions are exemplified by (137) and (138). They contain words like WAPI - "where?", NANI - "who?", and others. The unmarked location of the nuclear accent in questions of this sort is the final word. Given the structure of Swahili, this position will be occupied by the question word itself (as in (137) and (138), or by a lexical item such as KITABU - "book". Whether it is the question word or lexical Argument which occupies the final position of the utterance, the nuclear accent will go to it. This is clearly because these are precisely what the question is all about.

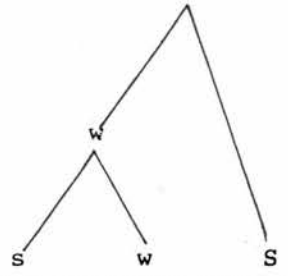
However, the nuclear accent may be preceded by one or more constituent accents. One or more word stresses may also be manifested. The same pattern may also occur after the nuclear accent in non-interrogative utterances.

Here it is, of course, not possible, since the nuclear accent is normally located in final position.. Thus, in (137), while the nuclear accent is on WAPI, there is also a word stress on *'baba*. Consequently, there are two accent domains. In (138), we also have two accent domains, with a word stress manifested on *ki'tabu* and the nuclear accent on NANI.

But questions with explicit question words may also be marked. When that is the case, the question word will be in a position other than final. Example (139) illustrates this.

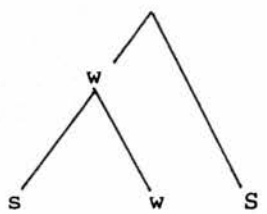
(139) [NA*ni*] [*amepasua kiTAbu* ?]
who he-has-rip book
"who has ripped the book?"

When the question word is non-final in the utterance, it loses its power to attract the nuclear accent. A nuclear prominence on it in that location is unacceptable (see the starred form above). Therefore, although a word stress is manifested on the question word, here, the nuclear accent still goes on the word in final position – in (139), KITABU ("book").



(139a) NAni amepasua kiTAbu?

The accentual pattern of (139) may be realized in one of two ways. There may be only two constituent accents as in (139). This can be represented as shown in (139a). The other possibility is for each of the constituents to have a constituent accent, the rightmost of which is the nuclear accent (139b).



(139b) NAni amepasua kiTAbu?

In other questions, no such explicit question-word may be present. When this is the case, any other word may have its morphological structure augmented with the interrogative suffix, *-je*. It is suffixed to the relevant word, normally the Predicate.

(140) [MA*mbo*] [*yalikuWAje* ?]
things they-pst-be-how
"how did things go?"

cf a. [how did things GO ?]

b. [HOW did things go ?]

c. [how DID things go ?]

d. [how did THINGS go ?]

(141) [JO*ni*] [*alimwuaje Simba* ?]

The nuclear word is placed on the word containing the interrogative morpheme, itself in final position. However, should the verbal word and its interrogative suffix be followed by another word, (eg Object Argument in (141)), then the word in final position will be the nuclear word - *Simba* in our example.

But, there are also questions in which there is neither an explicit question word nor an interrogative morpheme suffixed to another word. (142) is one example of such questions.

(142) [HA*ta kama*] [JU*ma*] [*haKUja* ?]

even if Juma not-come

"even if Juma did not come?"

Such utterances are structurally affirmatives. Only the intonation pattern turns them into questions. The main accent, even here, goes to the word which occupies the final position. There may or may not be word stresses preceding it.

The relevant generalization for question utterances in Swahili seems to be the following. The nuclear accent may or may not be preceded by one or more constituent accents and one or more word stresses. In any case, the former will be located on the question word, when this is final; or on any other word that occupies the final position in the utterance.

Imperatives and interjections usually tend to be short. Some examples to

illustrate this point are listed in (143), (144) and (145).

(143) [*usɨPIte*] [*HApa*]

you-not-pass here

"don't pass here!"

(144) [NE*nda*] [*ZAko*]

go yours

Lit. 'go your way'

"go away!"

(145) [*nisikuone*] [*TEna*] [HA*pa*]

I-not-you-see again here

"let me never see you again here!"

Short as these may be, they frequently have more than one accent domain each. Thus, even though (143) consists of no more than two words, it has two accent domains; so does (144). The Predicate may, as in (143) and (144), be the location of a word stress. But the nuclear accent is in all cases located on the Condition (the first Condition in (145)).

2.6.3. Accent in complex structures

So far we have seen structurally simple utterances. The accent locations in complex structures of certain types are also predictable in Swahili. A typical case is that of utterances like (146), (147) and (148).

(146) [*kama utakwenda* MJI *ni*] [*tafaDHAli usisa*HA *u kupiga 'simu*]

if you-will-go town please you-not-forget to-beat telephone

"if you go to town, please don't forget to phone."

(147) [JO *ni alipofungua* MLA *ngo*] [*ngombe* WOte *walitoka* N *je*]

Joni he-pst-con-open door cows all they-got out

"when John opened the door, all the cows got out."

(148) [*cha*KU *la kilivyokuwa kI*TA *mu*] [*wa* TO *to walifurahia SAna*]

food it-was sweet children they-were-happy-for very

"the food was so delicious, the children enjoyed it very much"

Utterances of this type tend to divide up into two accent domains. The division goes parallel with the boundaries of the syntactic clause. Thus the first domain of (146) corresponds with the subordinate clause - KAMA UTAKWENDA MJINI, and the second with the main clause. Patterns quite similar to that are repeated in (147) and (148). The constituent accent of the first domain falls on the rightmost word of the domain. That of the second, which is also the nuclear accent, varies from the first semantic constituent of the domain (eg (146) and (147)) to the last (148).

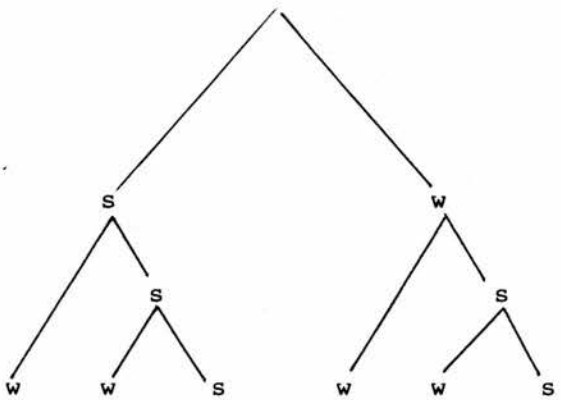
Some of the most complex structured Swahili utterances are those in Appendix V. This is a set of data based on recordings of a radio programme, *Matangazo ya Kifo* - "announcements of death". This set of data stands somewhere between spontaneous interactive speech and the data from reading (Chapter 4). In the programme, while the presenter does not actually read from a prepared full script as such, the announcement of each death nevertheless follows a preset basic format.

The name and address of the person who sent in the announcement is directed (friend or relative of the deceased) - **ndugu salama mbogo wa anawari arusha**; followed by **anasikitika kutangaza kifo** - "is sad to announce the death of"; followed by the name and particulars of the deceased - **cha mama yake mdogo Tesa Ali**; followed by such details as when and where the death occurred - **kilichotokea huko Sanawari Arusha jana usiku**. This is then followed by details of the burial (when and where it is to be/has been held) **mazishi yatafanyika kesho kutwa jióni huko huko Sanawari Arusha**. The final sentence then lists the name(s) and address(es) of person(s) for whom the announcement is specifically intended - **habari ziwafikie dada wa marehemu Chausiku Hamisi wa Tanga** ...

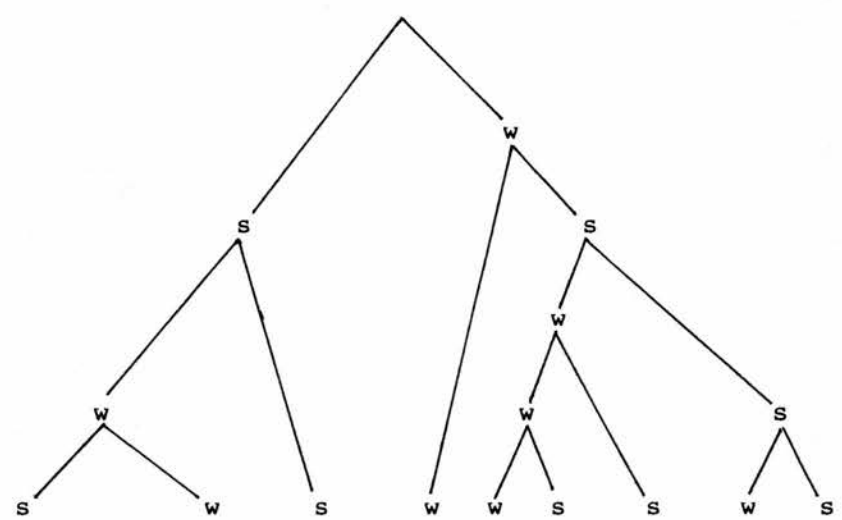
The presenter delivers every announcement in a sequence of utterances of three long complex sentences, each consisting of several embedded clauses. The prosodic structure of one death announcement is in most respects similar to that of another. We therefore provide the transcription of only one in full in Appendix V, with the accent domains and nuclear accents, constituent accents and word stresses marked.

Of the eight intonation groups in the three sentences constituting one announcement, four have two accent domains (ie the first, third, sixth, seventh each consist of only the nuclear accent and a constituent accent) and four have three accent domains (a nuclear accent and two constituent accents).

Those with only two are exemplified by (149) and those with three by (151).



(149) [ndugu salama MBOgo] [wa sanawari aRUsha]



(150) [anasikiTIka kutangaza KIfo] [cha mama yake mDOgo tesa Ali]

In each domain there is a constituent accent (the most prominent in that domain) and one, two or more word stresses. The constituent accent is the rightmost accent in a majority of all the accent domains. But, in one half of

the initial accent domains, it is the leftmost accent. In seven out of the eight intonation groups, the nuclear word and hence nuclear accent is located in the initial accent domain. The only exception is the last intonation group, where the nuclear accent is in the second accent domain. This is altogether understandable since the pitch of the rightmost constituent accent is downstepped in the intonation group (see Chapter 3).

2.7. Comparisons Between English and Swahili

Having summarised the situation in English, and presented the evidence for both focus and accent placement in Swahili, we can, at this juncture, attempt to list succinctly some of the similarities and differences between Swahili and English, with respect to focus and the placement of nuclear and other accents.

For Swahili, as for Gussenhoven's analysis of English, it is by far more satisfactory to account for the distribution of accents, especially in utterances of interactive speech, not by an unfettered freedom whereby the speaker directly highlights individual words. Rather, the placement of nuclear accents, constituent accents and word stresses follows the assignment of [+focus] and [–focus] to the appropriate portions of his utterance.

In English, when the whole utterance is marked [+focus], the nuclear word is neutrally located towards the end; hence *end-focus*. The nuclear word in such circumstances is, consequently, the rightmost lexical item. This, however, is not the case in Swahili. The principal reasons are that Swahili permits almost unlimited mobility of the constituents within the intonation group, so that any constituent designated as the nuclear constituent may be brought to initial position, if it is to be signalled by neutral nuclear tone; and that within the nuclear constituent, there will be a hierarchical relationship of strong to weak.

But the direct link between focus domains and accent locations that

Gussenhoven advocates for English does not always hold in Swahili. As shown in (151), once the focus domains have been assigned, the English accent placement rule will simply scan the constituent composition of the focus domain and assign accents accordingly.

(151) *our DOG's disappeared.*

(152) *mbwa 'wetu katoWEka.*
dog our has-it-disappear

(153) *mbwa WEtu* katoWEka.

(154) *mbwa* WE*tu katoweka kiaJAbu.*
dog our has-it- by-mystery
"our dog's mysteriously disappeared."

(155) *mbwa WEtu* katoweka kiaJAbu.

(156) *mbwa WEtu* kato'weka kiaJAbu.

If the domain contains only an A, P or C, or sequences of AC, CA, PC or CP, then each of those constituents is assigned an accent. If, however, there is a sequence of AP or PA, then the accent goes to the A. The accent assigned last, that is the rightmost accent, becomes the nuclear accent.

We can contrast (151) with its Swahili equivalent, (152). Each of these examples consists of a sequence of A followed by P. But in the Swahili

example the accent goes to the P rather than A. The A only marks the upward shift in the pattern, precisely on **wetu**. The falling accentual pitch movement occurs on the stressed syllable of the final word. Thus the English AP or PA rule does not apply in Swahili.

An instantly recognizable difference between the two languages stems from the difference in word order between Swahili and English. The English Argument in (151) consists of a possessive pronoun followed by the noun which is the head of the constituent. The same constituent in Swahili (150), is structured in such a way that the head precedes the pronoun. But, whereas in English the accent goes to the Head, in Swahili it goes to the Pronoun.

The third difference is that illustrated by (153), (155) and (156), as opposed to (152) and (154). Whereas all the Swahili examples – like the English one – consist of single focus domains (with one nuclear word), (152) and (154) have only one accent domain each (ie containing only the nuclear accent), while each of the remaining Swahili examples consists of one focus domain but with two ((153) and (155)) or three accent domains as in (156). The effect of increased number of accent domains and, therefore, accents in an utterance is that its tempo is considerably reduced.

Both languages share the important fact that accent placement follows the assignment of focus domains and accent domains. Similarly, that accent placement is rule-governed in both Swahili and English is also a significant similarity. It puts in question any theory that contends that the assignment of accents in discourse is dependent entirely upon the whim and free choice of the speaker. Even in marked accent domains in Swahili utterances, the speaker's freedom is constrained by the pragmatic and contextual factors (or, in Gussenhoven's terms, questions relating to the Variables and Background) which govern the appropriateness of a given configuration of accent distribution in its discourse environment. The speaker's freedom is clearly

limited. At best, the speaker is free, relatively speaking, to select one Variable rather than another with respect to a given discourse Background. But the locations of accentual prominence in the resulting utterance will then be determined by the prosodic rules of the language.

Subject to the appropriate pragmatic and contextual environment being present, any given word in English is potentially accentable within the discourse framework. The same thing cannot, however, be said for Swahili. For, in the latter language - with the exception of a few lexical cases, monosyllables are not accentable.

(157) he went out WITH Mary.

(158) * nilizikata KWA kisu.
"I cut them WITH a/the knife."

In particular, there is no appropriate context in which a grammatical monosyllabic Swahili word may carry a nuclear accent. Thus, it is easy to imagine a scenario in which the nuclear accent locations in (157) and (159) are not only perfectly acceptable, but also the only appropriate ones; the Swahili examples in (158) and (160), however, are totally unacceptable.

(159) we ate ***AND*** drank as much as we could.

(160) * tulikula **NA** kunywa kiasi tulichoweza.
we-pst-to-eat and to-drink amount we-pst-it able-to
"we ate AND drunk as much as we could."

Clearly, minimal and polarity focus (PFR) does not trigger accent in Swahili in a way similar to that in English (or even Dutch). PFR for English, according to Gussenhoven (1983), is summed up by (161) - where NC is the "nucleus carrier".

(161) a. NC(X) [-counterassertive]

b. operator [+counterassertive]

That rule, in either of its two components, cannot apply in Swahili the way it does in English data. To appreciate this fully, we only need adduce the data in (163) - (168). These are pairs of utterances the first member of which is an accentually well-formed English utterance; the second a Swahili one with an unacceptable nuclear accent location. (166), which corresponds to the English utterance in (167), behaves differently from (163) and (165).

(162) but i DO love you.

(163) * lakini niNAkupenda.
but I-do-you-love
"but I (do) love you."

(164) no, the house ISn't on fire.

(165) * la, nyumba HAiungui.
no house not-it-burn-not
"no, the house isn't on fire."

(166) my father ISn't a policeman.

(167) baba YAngu SI polisi.

If an utterance is marked for the feature [counterassertive], the prosodic structure of Swahili does not signal that fact by the marked location of the nuclear accent in that utterance. The nuclear location is assigned in the usual way, as indicated in (168), (169) and (170) for the above starred Swahili forms (as shown in (160), (163) and (165)), respectively.

(168) tulikula na KUnywa kiasi tulichoweza.
we-pst-eat and to-drink amount we-pst-can
"we ate and DRANK as much as we could."

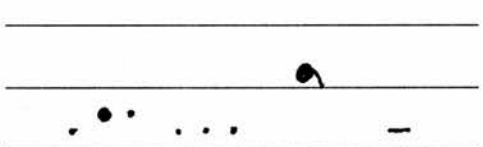
(169) lakini ninakuPEnda.
but I-do-you-love
"but I (do) love you."

(170) la, nyumba haiuNGUi.

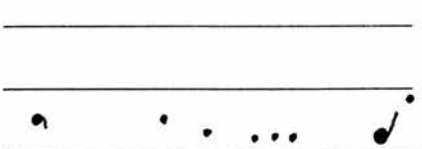
no house it's-not-burning

"no, the house isn't on fire."

The explanation for the acceptability of the nuclear location in (167) is quite simple: SI - "not" - is one of the few accentable monosyllables. But the speaker's intention that (168) - (170) are to be regarded as marked with respect to [counterassertive] has to be signalled by the intonation pattern. We therefore illustrate the marked patterns for (169) and (170) in (171) and (172) below (the interlinear tonetic transcription used is explained later).

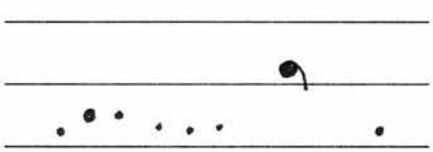


(171) [laKIni ninaku P E n d a]



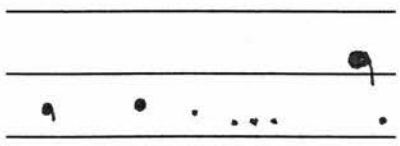
(172) [LA] [NYUmba haiu N G U i]

To signal such markedness in (171), there is a falling nuclear tone. This itself is not marked. But it is then followed by an obligatory tail which is low and significantly long. This is marked. It contrasts with what would be the case in a neutral or unmarked pattern for the same utterance in a different context or conveying a different communicative intention of the speaker. This may be illustrated by (173), where the nuclear tone is once again falling, but the obligatory tail is low and short.



(173) [laKIni ninaku P E n d a]

The markedness is signalled differently in (172). Here the nuclear tone is a rise. The obligatory tail ends around mid. This contrasts with the unmarked pattern in two important ways. First the neutral nuclear tone is a high fall. Secondly, its obligatory tail remains low.



(174) [LA] [NYUmba haiu N G U i]

no house not-burning

Patterns in the intonation groups and the nuclear tones used are treated in Chapter 3.

In his discussion on accent placement in English, Gussenhoven appeals – among other things – to such notions as Topicalisation for locating accents. We can cite here two of the examples whose accent locations he attributes to Topicalisation.

(175) doris had LEFT! (that's the whole point!)

(176) My tyres had been SLASHED! (How could I?)

It is worthwhile at this juncture to juxtapose Swahili examples corresponding to (175) and (176). This will enable us to briefly compare the two languages in this respect.

(177) DOris alishaoNDOka.

she-pst-already-left

"Doris (had) already LEFT."

(178) mipira YAngu ilikuwa imepasuLIwa.
rubbers mine they-pst-have they-have-slash-been

As those examples indicate, there is no difference between English and Swahili where the assignment of the nuclear accents is concerned in such data. It is important, however, to point out that in Swahili the unmarked location for the nuclear accent would in each case be the Argument: *DOris* and *YAngu*. As in the previous marked cases, as if to reinforce the signal for the markedness, here Swahili also uses a marked nuclear tone.

The principal point here concerns the important role played in Swahili by syntactic structure and word-order through shifting the nuclear constituent from one location to another in the utterance. Sometimes this may also produce a marked syntactic structure; but it also enables the speaker to shift the nuclear constituent from an otherwise marked position to a neutral one. We shall use (179) - taken from Maw (1974:59) - to illustrate a marked syntactic structure produced by such transformations.

(179) riziki alipata dudu.
livelihood it-pst-got insect
"(its) livelihood, the insect got."

(180) mdudu alipata riziki.
insect it-pst-get livelihood
"the insect got (its) livelihood."

What we indicated by (179) is an utterance consisting of Argument, Predicate

and Argument. This is exactly the same sequence of constituents as in (180). The difference between the two, of course, is that in (179) the Object Argument has been moved to initial position and the Subject Argument to the final position. Now **riZIki** would be in a marked location for nuclear word in (180). If the nuclear constituent, and therefore, nuclear word remained in such a marked position, the resulting nuclear tone would also be a marked one (see Chapter 3). To be able to use a neutral nuclear tone, the speaker would then have to opt for a syntactic structure which brings the nuclear word to the unmarked, front position. These possibilities are illustrated by (181) - (184).

(181) mDUdu alipata riZIki.
"the insect got (its) LIVElihood."

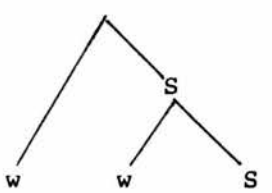
(182) mDUdu alipata riZIki.
"the INsect got (its) livelihood."

(183) riZIki alipata DUdu.
"(its) livelihood, the INsect got."

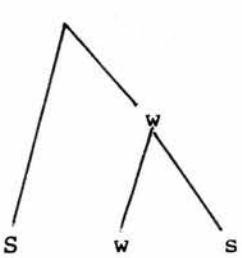
(184) riZIki alipata DUdu.
"(its) LIVElihood, the insect got."

In each of the examples (181) - (184), the Predicate combines with the Subject Argument it precedes (Object in (181) and (182); Subject in (183) and (184)) to form one larger constituent. Such combinations of constituents result in a hierarchical relationship between the Predicate and Argument with which it

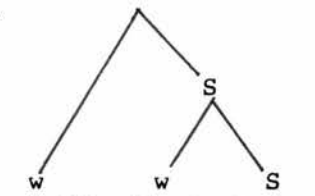
combines. In such a hierarchy, the Predicate is subordinated to the Argument unless there is a contrastive accent on the former. There will be two accents, a NUClear accent and a conSTituent accent. This is similar to what is suggested by Ladd (1983:167) for the English constituents **read** and **books** in *He doesn't even READ books anymore.* It is also similar to Gussenhoven's (1984:18) rule for English that in a sequense of [+focus] AP or PA, the accent goes to A.



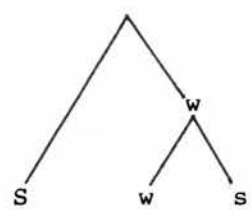
(182a) mDUdu alipata riZIki.



(182b) mDUdu alipata riZIki.



(183a) riZIki alipata DUdu.



(184a) riZIki alipata DUdu.

The neutral placement of the nuclear accent in Swahili is in a sense a mirror image of what happens in English. In the latter, full or broadest possible (when the whole utterance is [+focus]) would locate the nuclear accent on the rightmost lexical item. The result is ambiguity between full focus nuclear accent and narrow or contrastive focus nuclear accent. But in Swahili that occurs in the initial or leftmost constituent (182a and 184a) (cf Cruttenden 1986:147). Gussenhoven (1984:23) has argued vigorously against the notion of *normal stress,* what is otherwise referred to as *end-focus* (see eg. Quirk et al 1972). It is the basis of neutral or unmarked *tonicity* in Halliday's model for English intonation. The nearest to this in Swahili data is the situation that obtains in unmarked accent domains, where the nuclear word is the rightmost.

An important similarity between the two languages is in the formation of

accent domains. In both languages, in a sequence of constituents, two or more may combine to form one larger one with a single accent shared by all the combined smaller constituents. The prominence of the smaller constituents is thus subordinated to that of one of the constituents. The emphasis of this similarity between Swahili and English could have far-reaching significance and consequences for the teaching of English to learners who are speakers of Swahili (ie in countries like Tanzania, Kenya, or any of the other Eastern African countries).

Between English and Swahili, therefore, the only clear similarities are that we can identify one nuclear accent in each intonation group; that the assignment of the nuclear and other accents follows the assignment of [+focus] and [-focus] and accent domains, and therefore that the assignment of accents is generally rule-governed and not achieved by the haphazard highlighting of individual words.

But the two languages also have some outstanding differences in this area. The structure of the accent domain in Swahili differs from that in English. A Swahili accent domain consists of one semantic constituent or two or more combined to form a larger one, provided that there is only one constituent accent per accent domain. Moreover, apart from the constituent accent, each domain will also have one or two or more word stresses.

In an intonation group with only one accent domain, the constituent accent will also be the nuclear accent. If there are two or more constituent accent domains, then one of these will be the nuclear accent, usually the leftmost. The prominence of the accents - from the nuclear to the constituent (and word stresses manifested) - proceeds in a relationship of subordination of lower to higher levels. word stresses are subordinated to constituent accents and they to the nuclear accent.

That is generally not the case in English. In English utterances we need to recognize a nuclear accent, optionally preceded and/or followed by one or more locations of minor prominence. This produces a crucial difference between English and Swahili speech prosody. English speech permits a great deal of *flattening* of the pitches of unaccented stretches of the intonation group, so that long unaccented stretches may precede or follow the nuclear accent. It may be said that such flattening is evidence of the fact that English intonation permits extreme subordination, so that there may sometimes only be a contrast between a highlighted nucleus and the rest of the intonation group (of any length).

Swahili does not permit such flattening, with two or at the most three unaccented words between the main accents. The relatively large number of accents of different types likely to occur in a Swahili utterance must doubtless be partly responsible for the fact that the prominence of Swahili nuclear accents does not stand out as sharply in the intonation group as do English ones.

CHAPTER 3

NUCLEAR TONES IN SWAHILI

3.1. Introduction

In Chapter 2 it was suggested that a distinction be made between **nucleus** – the information that constitutes the focal centre or core of the speaker's contribution or variable in the intonation group, and ***nuclear syllable*** – the point or syllable in the nucleus where the maximal pitch prominence (manifested as the the most significant pitch change up or down in the intonation group) is located in that intonation group. The present Chapter is centrally concerned with the **nuclear tones** of Swahili – the pitch movements which realize the accents of nuclear syllables. The substance of the present Chapter is based on three main assumptions relating to those aspects of the intonation group.

The first of these assumptions is that an utterance will normally consist of at least one intonation group, containing at least one [+focus] stretch which may be the whole tone group, one constituent within it, or even less. In other words, in uttering the sentence or utterance, the speaker will be making at least one point to which he wishes to attract the hearer's attention. He may be making two or more – in which case there will be two or more intonation groups; but an utterance cannot be entirely [–focus], otherwise there would be no point in uttering it in the first place.

The second assumption is that every [+focus] constituent or stretch will have at least one nucleus. By nucleus here we refer to a semantically self–contained bit of the utterance. In this sense we include a stretch that may be considered the nuclear constituent or nuclear phrase, which contains the nuclear word; or it may consist of nothing but the nuclear word. The third assumption is that the nuclear word will contain the nuclear syllable which is

realized phonologically by the nuclear tone.

In view of those three assumption, the Chapter sets out to study nuclear tone types in Swahili utterances. These will then be compared with those of English.

3.2. Maw and Kelly

Maw and Kelly (1975) have attempted to analyse the intonation of Swahili within the British traditional approach. There are some close similarities with the Hallidayan treatment of English intonation.

The authors adopt *tone group* as the domain for the intonational features of Swahili they analyse, just as Halliday (and other analysts of the British tradition before him do) does for the RP accent of British English. They therefore proceed to analyse Swahili utterances into tone groups. As in Halliday, the tone group is seen as having a bipartite structure.

That bipartite structure consists of *tonic* and *pretonic.* The former is obligatory, and may optionally be preceded by the latter. The authors suggest that the pretonic in Swahili tone groups may have a *salient,* which may itself be preceded by a *presalient*[11] Of those, the presalient may only occur if the salient is present. Clearly, presalient and salient are only other terms for 'prehead' and 'head', respectively, which are found in works on English intonation (eg O'Connor and Arnold).

The tonic and salient share two things in common: they both occur on 'accented' syllables in a word, and they are 'pivotal' points of the tone group, governing its overall pitch contour. Every complete utterance, it is stated, must have a tonic. But, since the pretonic is optional, the salient is present only when there is a pretonic.

According to the authors, Swahili has six *tonic types*. These are listed are follows: (A) Fall, (B) Drop, (C) High level, (D) Rise, (E) Rise-Fall, (F) Fall-Rise. Their frequency of occurrence is claimed to be A, B, C. D, E and F are considered rare.

The authors then go on to discuss pitch features of those first three tonic types at some length. But their tonic types D, E and F are glossed over, because they are considered insignificant. Tonic types A, B, and C are said to be found in (185) - (187).

(185) Lakini mpaka saa sita ya usiku nisile chochote.
but until hour six of night I-not-eat anything
"but I should not eat anything until midnight."

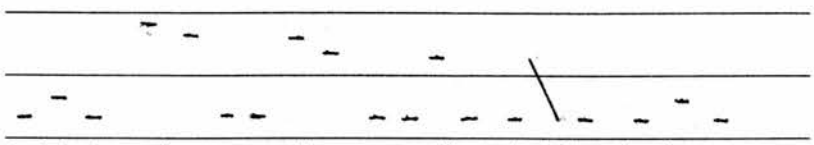
(186) Nikatolewa tena kwenye gari.
I-pst-be- again on car
"I was again taken on the car."

(187) a Wakanilaza.
they-pst-me-put-to-sleep
"they made me sleep."

b Halafu tena.
later again
"again later"

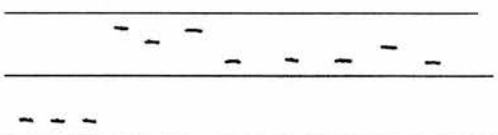
The pitch pattern in each of the examples (185) - (187) is illustrated by the authors as shown below in (188) - (190) respectively.

(188) Tonic Type A



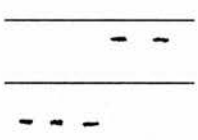
Lakini mpaka saa sita ya usiku nisile chochote.

(189) Tonic type B

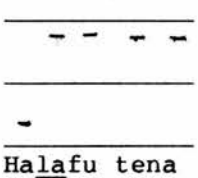


Nikatolewa tena kwenye gari

(190) Tonic type C



Wakanilaza



Halafu tena

Tonic type A is characterized by a fall from high or mid to low on the first 'accented' syllable of the tonic, with the tail remaining low or progressively lower, with higher levels or slight falls on 'accented' syllables. Tonic type B has a drop from high level on the first 'accented' syllable to mid level on the

following syllable (or a fall from high to mid on the first 'accented' syllable). The tail remains mid, 'accented' syllables slightly higher than non-accented ones.

Tonic type C has a high level tone on the first 'accented' syllable of the tonic, followed by a high-level tail.

The analysis is restricted to utterances in which the tone group and clause boundaries coincide, that is, where (in Hallidayan terms) there is neutral tonality.

The choice of Tonic type, it is reported, is determined by several factors (p 37). The Fall, Tonic type A, occurs neutrally with 'the last clause in a sentence', and may therefore be a signal of the end of a sentence. Rarely, it occurs in non-final clauses. The drop, (B), normally occurs neutrally in non-final position. But it may occur finally for special effect. Tonic type C, is called a Rise. However, as (190) clearly shows, what is meant here is probably 'high level'. It is said to be non-final like B. It almost always precedes a deliberate break, perhaps for dramatic effect. It is reported to be most frequent in their narrative text (ie the purely narrative one). It is suggested that this Tonic type 'marks a recognizable, institutionalized type of break' (p 45).

3.3. The data

The data on which our discussion for nuclear tones in Swahili intonation groups is based is drawn mainly from the texts Appendix I, Appendix II and Appendix III also used in the discussion in Chapter 2.

For each one of the utterances used, the [+focus] constituent(s) in each focus domain will be marked out by *italics*. The nuclear-syllable, that is nuclear syllable (occurring on the stressed syllable) of the nuclear word, is indicated by big CAPitals while constituent accents are represented by small CAPitals (191) -

(193).

(191) kuna mazao *mbaliMBAli.*

"there are VARious types of crops."

(192) *JUma alishinda mbio zake* zo *te.*

"JUma won all his races.

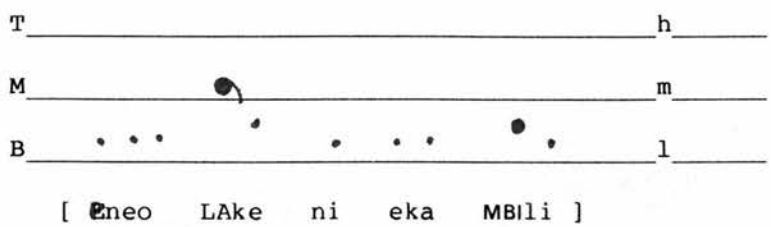
(193) baba yangu *aliMWIta* polisi wa zamu.

"my father CALLED the policeman on duty."

The analysis of the nuclear tone and the pitch patterns of the rest of the intonation group in each case relies chiefly upon auditory analysis. Because the tape recordings were not made in a sound proof environment, and therefore contain background noise, it was thought inappropriate to rely too much on instrumental analysis. However, some instrumental support is provided for each of the nuclear tones; the automatic Real Time Sampling was done by MASSCOMP MC5500, and F0 analysis by ILS (Interactive Laboratory Systems) computer programmes. Each of the utterances, sometimes sections of it, was listened to repeatedly. A second auditory analysis was carried out some months later to check the accuracy of the first one.

The pitch pattern was then transcribed as shown in Fig. 1. Although already referred to and used several times, our *interlinear tonetic transcription* (ITT) is here outlined fully. This is because it is especially in this and the next chapter that ITT is extensively deployed.

Figure 1. Interlinear representation.



The top and bottom parallel lines represent the top and bottom of the speaker's voice range. The pitches of the intonation group then fluctuate between those two limits. The third line, lying halfway between the top and bottom of the range, represents the middle of the speaker's pitch range. The space between the bottom (B) and middle (M) lines, therefore, represents the span for pitch variations from low (l) to mid (m). For easy reference, any pitch in this area will be Low. That between the middle and top (T) of the range represents pitch variations from mid to high (h). For easy reference, any pitch in this area will be High.

The pitch variations or fluctuations may be simple jumps from one level to another. These are indicated by straight lines. But the variations may also be manifested as pitch movements, which are marked as curved lines.

3.4. Nuclear tones in Swahili

The main task of this Section is the exposition of the main pitch-movement types which realise nuclear accents in Swahili. Apart from listing and describing them, the Section will also outline their phonetic realisations. Some semantic and syntactic factors relevant to those nuclear tones will briefly be mentioned. Finally, the Section will aslo make comparisons between our nuclear tones and the six Tonic types of Maw and Kelly, on the one hand, and with Halliday's seven Primary tones of RP, on the other.

In the discussion in this Section, we shall be concerned with pitch movements which may occur entirely on the nuclear syllable, or which begin on a prenuclear syllable within the nuclear word but culminating on the nuclear syllable. But occasionally, as in the case of the Rise-plus-Fall, the nuclear pitch movement may begin on the stressed syllable of a prenuclear word and end on the nuclear word. These nuclear pitch movements will, however, be regarded as separate - although clearly related - from what happens on the final syllable of the nuclear word, what we he shall term *obligatory tail.* The principal reason is that the obligatory tail, as will be demonstrated later in Section 6, has its own patterns which appear to interact with both the nuclear tone and *optional tail,* if any.

3.4.1. The Fall Nuclear Tone

The first and most frequent nuclear tone type, occurring in utterances of different types is what we shall refer to simply as the Fall or Falling nuclear tone. This nuclear tone has three variants: Simple Fall, Anticipated Fall and Half Fall.

The Simple Fall is found in both (194) A, asked as a neutral question, and the neutral response B.

(194) A shamba lina eneo GAni?
farm it-has area what
"what's the area of the plot?"

B eneo LAke ni *eka MBIli.*
area its is acre two
"its area is two ACres."

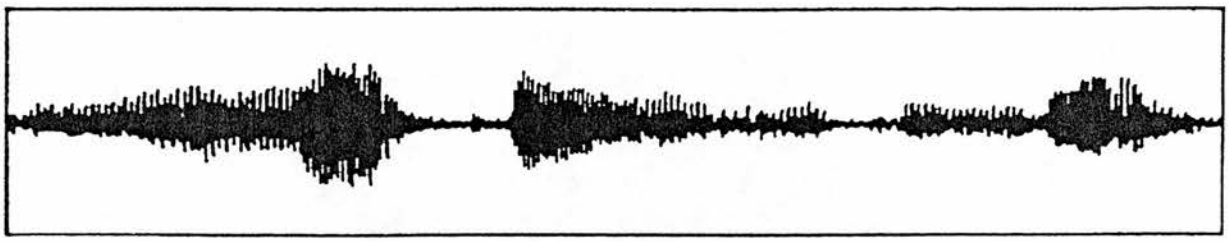
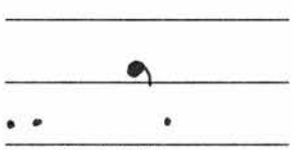


FIG. 2a. **eneo LAke ni *eka MBI I i.***
area its is acre two
"Its area is TWO acres."

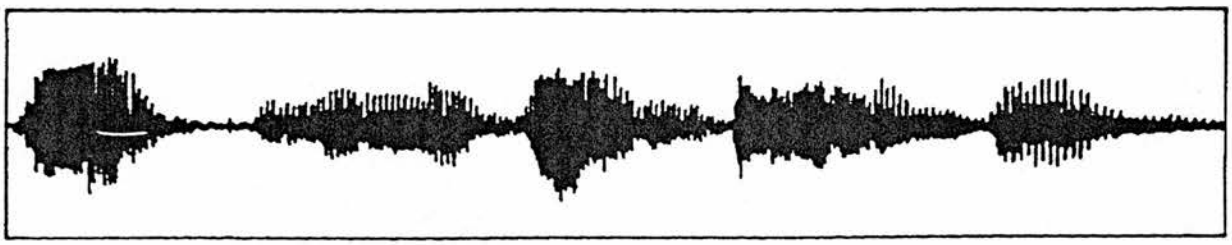
The pitch-movement of the Fall or Falling nuclear tone consists of a simple, unidirectional and completed Fall. The Fall is from High to Low (the representation closely follows Fig. 1). It begins and ends on the tonic-syllable, with the 'obligatory tail' remaining low and fairly short. Its completion is in direct contrast with the Half Fall nuclear tone (see below). It is illustrated in Fig. 2. This is corroborated instrumentally as shown in Fig. 2a.

FIGURE 2. The Fall nuclear tone.



The *anticipated fall* is a marked variant of the Fall nuclear tone. The terminological choice is a purely descriptive one. This is a Fall quite similar to the one occurring in unnmarked answers. Like the latter, the excursion is from H to L. The significant difference is that, unlike the Simple fall, the Anticipated fall occurs not on the tonic syllable but on the stressed syllable immediately preceding it. The anticipated fall most typically co-occurs with polysyllabic words which are, strictly, reduplicative or compound words. These are words such as ***mbalímbali, sawasawa, vilevile, yeyote.***

The nucleus (the communicative core of the intonation group) of (195A) is ***mazao GANI*** - "what types of crops" (crops-what type). ***GANI*** is the nuclear word, and *GA* is the nuclear-syllable. In (195B), the nucleus is **mazao *mbaliMBAli.*** *MBALIMBALI* is the nuclear word - "different types/kinds". It is, strictly speaking, the reduplication of the word **MBALI**. In the resulting



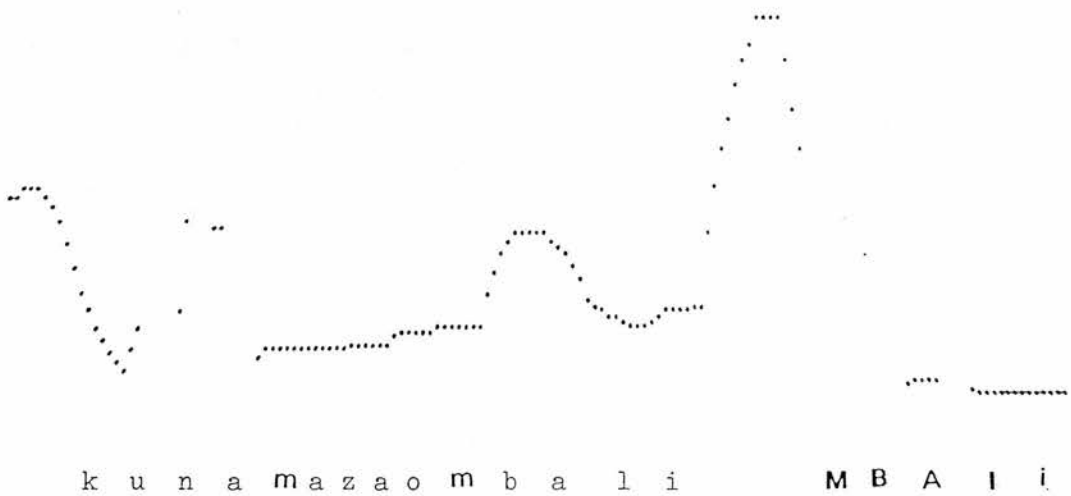


FIG. 3a. kuna mazao mbaliMBAli.

there-be crops different-kinds

"There are DIFferent kinds of crops."

compound word, the nuclear-syllable is the second of the MBA syllables.

(195) A shamba lina mazao GAni?

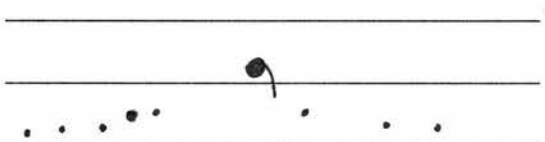
"WHAT crops are in the plot?"

B kuna mazao *mbaliMBAli.*

"there are VARious types of crops."

The pitch-movement of the anticipated fall is illustrated for (195B) in Fig. 3 and instrumentally as shown in Fig. 3a. The peak is on a prenuclear syllable.

FIGURE 3. The Anticipated Fall.



kuna mazao *m b a l i M B A l i.*

The half fall is another marked variant of the Fall nuclear tone. It occurs on the nuclear-syllable. The fall begins high and ends at about mid or just below mid. But it does not reach much lower. It is found only in non-interrogative utterances. There could well be similarities between this nuclear tone and Gussenhoven's modification 'Half completion'. The pitch-movement of the Half Fall is shown in Fig. 4 for the nuclear word of (196B).

(196) A ulisema NAni?

you-pst-say who

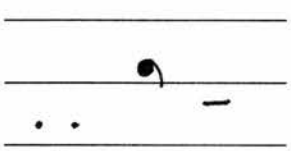
"WHO did you say?"

B *baba YAngu.*

father my

"MY father."

FIGURE 4. The Half Fall nuclear tone.



baba Y A n g u.

3.4.2. The Rise Nuclear Tone

The second nuclear tone type, the Rise, also begins and ends on the nuclear-syllable. The Rise is from L, but not necessarily from the baseline or bottom of the voice range. It culminates in H (ie above Mid). The specific range above mid depends on the pragmatic function of the utterance. For the nuclear word in (198B), the Rise ends just above the mid line. However, for (197B) it ends considerably higher.

(197) A maRIa *alioNDOka jana.*

Mary she-left yesterday

"Mary LEFT yesterday".

B *haiwezeKAni.*

not-it-possible

"It's impossible!"

(198) A *niliMWOna kabla* hajaoNDOka.

I-her-saw before she-not-left

"I SAW her before she left".

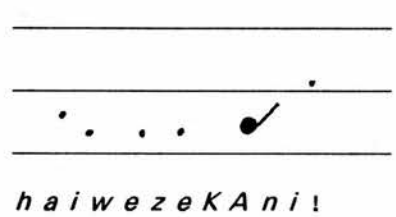
B *akasema NIni* ?

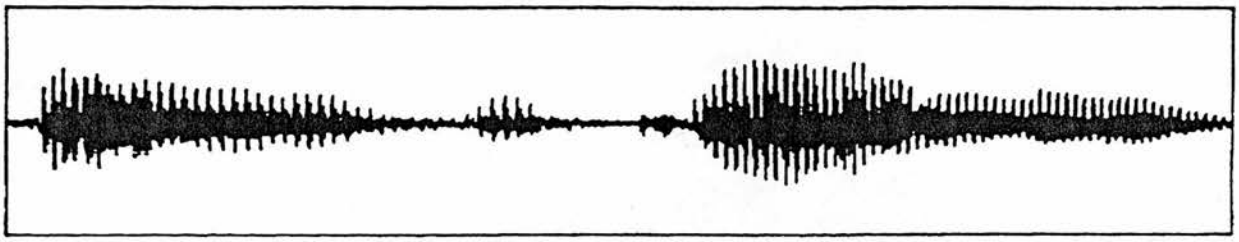
she-said what

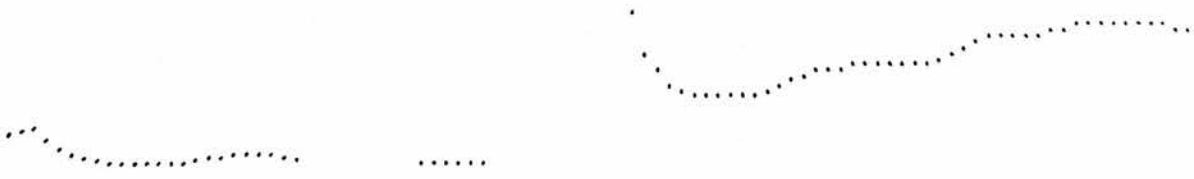
"And WHAT did she say?"

The respective pitch excursions of the Rising nuclear tone for the nuclear words of (197B) and (198B), respectively, are shown in Figs. 5 and 5a. This is supported instrumentally as shown in Figs. 5b and 5c.

FIGURE 5. The Rising nuclear tone.





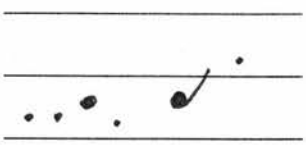


h a i w e z e K A n i.

FIG. 5b. haiwezeKAni!

"It's/that's impossible!"

FIGURE 5a. The Rising nuclear tone.



akasema N I n i ?

3.4.3. Compound Nuclear Tone

We shall refer to the third nuclear tone type as *compound nuclear* tone. This terminological choice is guided simply by its bidirectional pitch movement. It has two main variants: the *rise-fall* and the *rise-plus-fall.*

In Swahili, a marked question-word interrogative (an information seeking question) asked with a degree of passion, is signalled by *Rise-Fall.* The whole pitch-movement occurs on the nuclear word. The Rise takes place on the nuclear-syllable, and links to the Fall, which begins and ends on the final syllable of the nuclear word - the 'obligatory Tail' (see below). The Rise is from quite low to H. The Fall then starts at a higher pitch than the end of the Rise. In (199A), the nucleus as such would be **eneo GANI** - (what area?) (area-what). The nuclear word itself is 'GANI, and the nuclear-syllable 'GA. In B the nucleus is **eka *MBIli*** - "two acres" (acres-two). **MBILI** is the nuclear word, and the nuclear-syllable is MBI.

(199) A shamba lina eneo GAni?

farm it-has area what

"what's the area of the plot?"

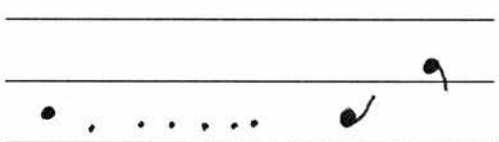
B eneo LAke ni *eka MBIli.*

area its is acre two

"its area is TWO acres."

The pitch movement of the RF nuclear tone in (199A) above is illustrated by Fig. 6 and 6a.

FIGURE 6. The RF.



SHAmba lina eneo G A n i ?

The Rise-plus-fall (RpF), unlike RF, consists of two parts. There is a Rise followed by a Fall. But, unlike in RF, the rise occurs two syllables before the nuclear syllable. It is followed by the fall on the nuclear syllable itself. The Fall begins from the same height and ends at L.

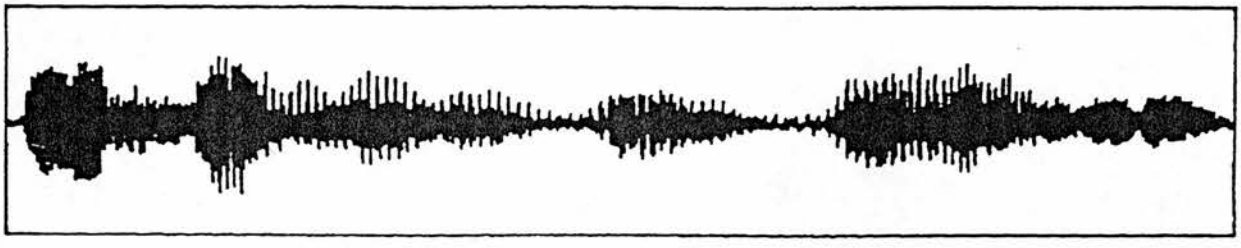
(200) A juma alishinda mbio zake?

he-pst-win race his

"did Juma win his races?"

B juma alishinda mbio zake *ZOte.*

"Juma won ALL his races".



s h a m b a l i n a e n e o G A n i

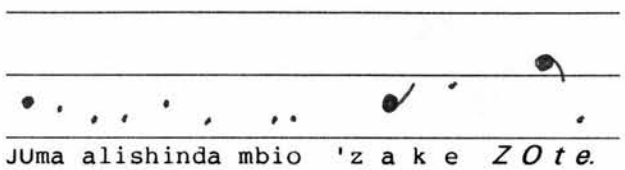
FIG. 6a. shamba lina eneo GÀni?

farm it-has area what

"What's the area of the plot?"

We shall use (200) B to illustrate the pitch movement of RpF in Fig. 7 below and instrumentally as shown in Fig. 7a.

FIGURE 7. The RpF.



Any of the nuclear tones discussed above may be selected for the realization of the nuclear accent. The choice of pitch movement type depends upon the pragmatic and contextual circumstances under which it is deployed. The nuclear tones considered in this Chapter are, therefore, realizations in pitch movement of the nuclear accent in an intonation group. The nuclear accent occurs in the nuclear segment of the intonation group. But the nuclear pitch movement does not in all cases occur exclusively on the nuclear syllable. It may begin and end on the nuclear syllable; it may also begin before but end on it; or it may begin on the nuclear syllable to end on the obligatory tail.

The intonation group will generally consists of three segments. The nuclear segment is the only obligatory one of the three. It may have before it a prenuclear segment. This may consist only of one or more syllables of a nuclear word which precede the nuclear syllable; but it may also be considerably longer (as long as one whole semantic constituent or more).

On the other hand, the nuclear segment in Swahili must be followed by the final syllable of the nuclear word - the 'obligatory tail'. However, in many utterances, the postnuclear segment is made up of the obligatory tail followed by a shorter or longer 'optional tail'. The prenuclear and postnuclear segments

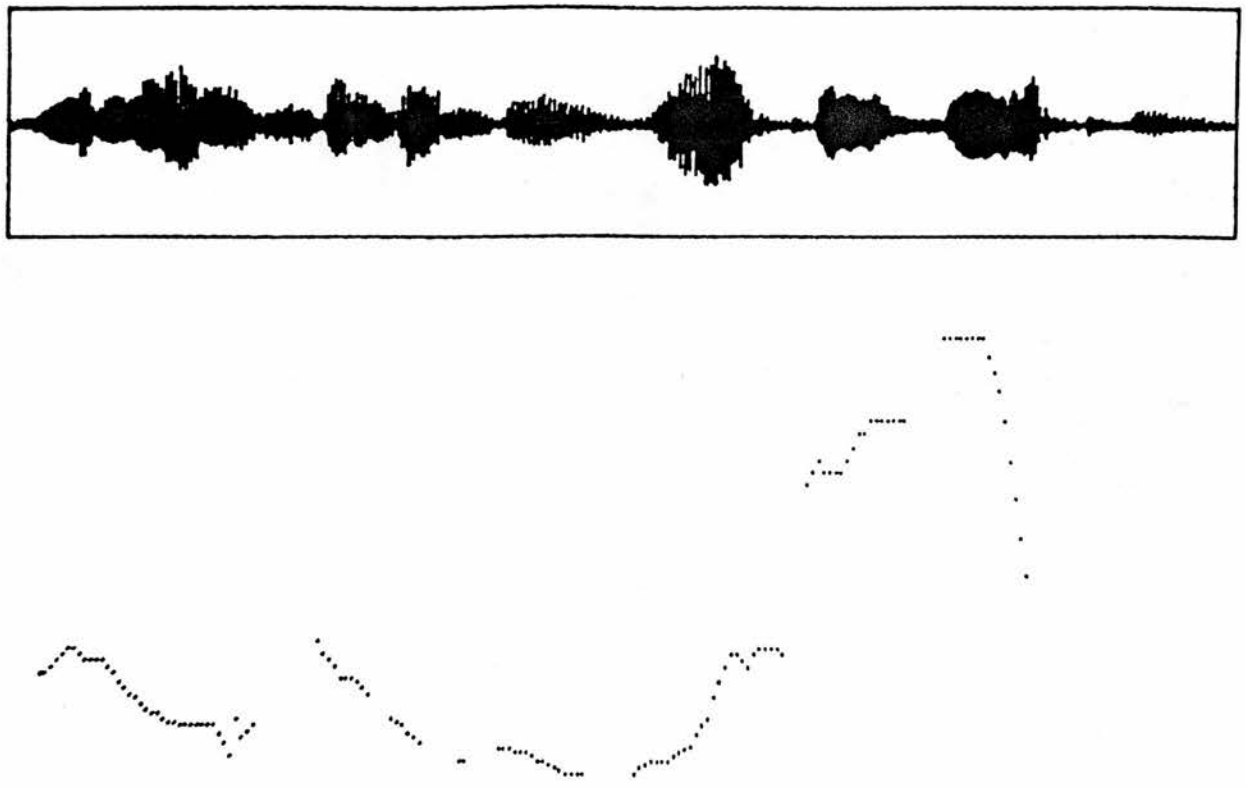


FIG. 7a. **JUma alishinda mbio zake *ZOte.***

he-won race his all

"Juma won ALL his races."

are discussed in turn in the next two Sections.

3.5. Prenuclear Patterns in English and Swahili

The nuclear tone types – Fall, Rise and Compound – discussed in the preceding Section often interact with the portions of the intonation group which come before and after the nuclear tone. The most prominent examples in this respect are the Anticipated Fall and the Rise Fall. It is therefore imperative that we also briefly outline the nature of the relationship between the nuclear tone and the prenuclear portion and between the nuclear tone and the postnuclear portion or tail of the intonation group.

Before the nuclear syllable, one of three possibilities may be the case. There could be nothing at all, as in bisyllabic – or one of the few accentable monosyllabic – nuclear words in the initial position of a intonation groups. But, when there is one or more prenuclear syllables, there are two further possibilities. There may be one or more prenuclear syllables in the nuclear word itself, or one or more unaccented prenuclear words. Secondly, there may be one or more word stresses before the nuclear accent (realised by the nuclear tone on the nuclear syllable; on of the prenuclear accents being a constituent accent).

3.5.1. Unaccented stretches

Discussion on the prenuclear segment of the intonation group is, of course, only pertinent in utterances where the nucleus is not in initial position, or at least where the nuclear word is polysyllabic. Examples such as (201) are, consequently, not relevant.

(201) A mambo yalikuwaje?

things they-pst-be-how

"How did things go?"

B *JUma alishinda mbio zake zote.*

he-pst-win race his all

"Juma won all his races".

However, when the nucleus is elsewhere in a given focus domain, then its relevance is quite obvious. Thus in (202), where the nucleus is final; (203), where it is medial, or (204), where it is closer to the beginning than to the end, there exist prenuclear segments.

(202) A sasa mtafanya nini?

now you-'ll-do what

"what will you do now?"

B *tumeamua kununua jeneREta.*

we-'ve-decide to-buy generator

"we've decided to buy a GENerator."

(203) A sikujua baba yako ni mwuaji.

I-didn't- know father your is killer

"I didn't know your father was a killer."

B baba yangu *aliMWIta* polisi wa zamu.
father my he-pst-call police of duty
"my father CALLED the duty policeman".

(204) A juma alifanya vizuri?
he-pst-do well
"did Juma do well?"

B juma *aliSHInda mbio zake zote.*
he-pst-win race his all
"Juma WON all his races."

Prenuclear considerations here begin with any syllable that precedes the nuclear-syllable of the nuclear word. This means (201B) is, in the examples so far cited, the only one where prenuclear considerations are totally irrelevant. But, in (205B) - where the initially placed nuclear word is polysyllabic, there are two prenuclear syllables, A- and -LI-.

(205) A juma alifanya vizuri?
"did Juma do well?"

B *aliSHInda mbio zake zote.*
"he WON all his races."

Strict prenuclear considerations would, therefore, be of three main kinds. The first kind would concern those involving any prenuclear syllables just mentioned and exemplified in (205B) above and (206) below.

(206) *hawaWEzi kutupa* umeme *wa ku* TO*sha.*

they-can't to-give-us power of enough

"they CAN'T give us enough power."

The second kind are those involving utterances where the nuclear word - monosyllabic or otherwise - is preceded by another word which is not accented (or other words which are not accented). This applies to (207B) - (209B).

(207) A shamba lina mazao gani?

"what crops are in the plot?"

B kuna mazao *mbaliMBAli.*

"there are VARious types of crops."

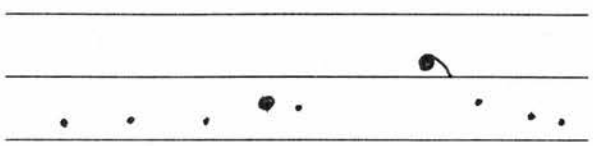
(208) A tatizo hilo limekuwepo kwa muda gani?

"how long has there been that problem?"

B ni *mwaka mZIma sasa.*

"it's now a WHOLE year."

FIGURE 8. Pitch-movements in unaccented prenuclear syllables.



k u n a m a z a o *m b a l i MBAli.*

(209) A akasema hataki kukuona tena.

he/she- said | he/she- not-wish | you-to- see | again

"she said she didn't wish to see you ever again."

B *akasema NIni* ?

she-pst-say what

"WHAT did he/she say?"

The prenuclear pitch-movements are exemplified by Fig. 8, where pitch-movements of the unaccented prenuclear syllables (207B) are illustrated. As the Figure shows, neither of the two prenuclear words is accented. It is rarely possible for a stretch longer than this not to contain even one location of minor prominence, and thus have a stretch of ***flattened*** or level pitches.

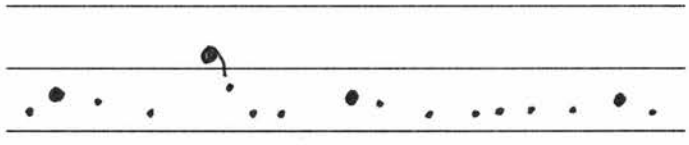
The first word in example (207B), ***kuna,*** is rarely accented in any context. The explanation would appear to be that it is a 'vacuous' or empty Predicate, "there

is". The second, ***mazao*** - "products/crops" - is accentable in neutral contexts such as **ShaMBAni kuna ma'zao** - farm there-are crops, where the first word forms a separate constituent and the second and third another constituent.

3.5.2. Accented prenuclear stretches

Any accents occurring before the nuclear accent realized by the nuclear tone on the nuclear-syllable are, by definition, constituent accents. Their phonetic realization is such that the pitch pitch-movement tends to be stepped-up towards the nuclear tone. Fig. 9 shows this clearly for an utterance with only one such constituent accent - on ***uPAnde*** ("side").

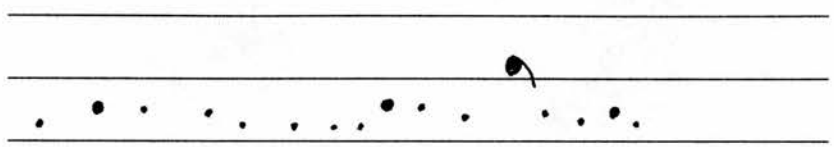
FIGURE 9. Pitch-movements in one prenuclear accent.



uPAnde wa JUu kuna MBOga na viazi su'kari.

When there is a constituent accent *and* one (or more) word stresses before the nuclear tone, the situation is as illustrated by Fig. 10. Here there are two such minor accents, namely on **se'hemu** - "section" and on **katiKAti** - "middle". The pitch will be stepped-up to that of the nuclear tone itself.

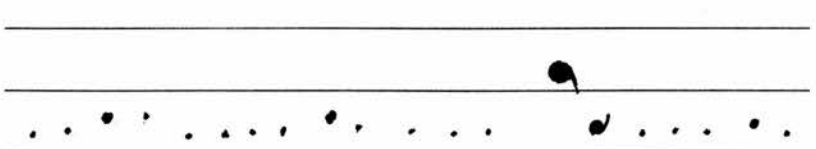
FIGURE 10. Pitch-movements in more than one minor prenuclear locations of prominence.



se'h e mu kama *ya kati* KA*ti ni TUpu kabisa.*

A special case of a stepped-up pitch pattern is manifested by utterances consisting of sequences of constituents which result in separate accent domains. This was discussed in Chapter 3. But we shall illustrate here using the example in Fig. 11.

FIGURE 11. Stepped-up pattern in utterances with complex structures.



nakuMBUka tulipoku'tana mara ya MWIsho tuliku'bali.

"I remember when we last met we agreed."

Such a pitch pattern is characterized by a sequence of rising minor pitches, like those one -**MBU** - and -'**ta** -. These rises culminate at the nuclear tone, which is a Simple Fall.

The prenuclear segment of the Swahili intonation group is optional, and has a structure consisting of two optional elements as indicated in (210). N is the nuclear syllable of the nuclear word. Any prenuclear syllables in the nuclear word itself are represented by P. The small p represents syllables in any prenuclear words. The brackets imply the optionality of the element in them.

(210) (p) (P) N

Rapid speech tends to reduce the number of accent domains and, consequently, accents; the first to be suppressed being the constituent accents (after word stresses). In very slow, deliberate speech, there would thus be a maximum number of accents of different degrees of prominence realized by varying degrees of pitch promincence. In more rapid speech there would be fewer. And in very rapid speech there would be a tendency for even fewer locations of minor prominence. However, it would be totally un-Swahili-like to have a long prenuclear segment which has been completely levelled or flattened out by such suppression of accentual prominence.

3.6. Tails

The term *tail* is used here to refer to any syllable(s) or segment of the intonation group following the nuclear tone. We begin by briefly presenting the evidence to support the situation in Swahili. Then we shall attempt to bring together the main similarities and differences between tails in Swahili and English. A considerable body of literature already exists dealing with the

subject of tails in English intonation (eg O'Connor & Arnold 1961; Halliday 1967; Gussenhoven 1984). For English, we shall therefore rely on findings already published in the literature.

3.6.1. Obligatory tails

A *tail,* as defined here, includes any syllable occurring after the nuclear accent. Postnuclear considerations, therefore, apply even where the nuclear word is in utterance final position. The explanation for this as follows. In Swahili, the nuclear syllable is word-penultimate, since that is the location of stress in the nuclear word. After the nuclear syllable there is the final syllable (unless we are dealing with of those few accentable monosyllables). This is what was earlier referred to as *obligatory tail.* Therefore, in that sense, even utterances such as (211) and (212) - just like any other utterance in Swahili - also have tails.[12] This is an obligatory tail.

(211) *tumeamua kununua jeneREta.*
"we've decided to buy a generator."

(212) juma alishinda mbio zake *ZOte.*
"Juma won ALL his races."

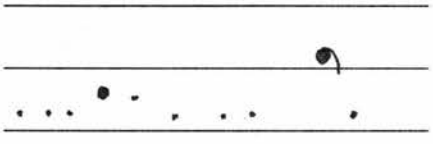
Obligatory tails are of six different types: Low short, Low long, High, Drop, Mid, and Rising. Each of these will now be dealt with in turn. The Low obligatory tail follows a nuclear tone ending with a fall, or one that ends low. This low tail is short. It is illustrated by the syllable *li* of MBILI in (213B).

(213) A shamba lina eneo gani?

B eneo LAke ni *eka MBIIi.*

The pitch movement of the 'low obligatory tail' in (213B) is illustrated in Figure 12 below.

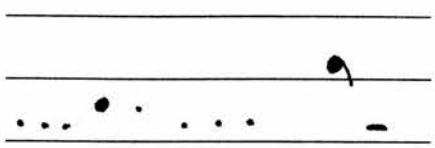
FIGURE 12. Low obligatory tail.



eneo LAke ni *eka MBI I i.*

Low long obligatory tails are marked (as opposed to the previous one which is neutral). Like the low short tail, it follows a nuclear tone ending with a fall. But, instead of following that with a low pitch on the normal length of the tail syllable, in this marked form the tail is considerably lengthened. Its markedness is to signify emphasis or counterassertiveness. Thus, for the utterance in Fig. 13, the context might be as follows. Speaker A asks B: ***nafikiri shamba lile lina eneo la eka tatu.*** "I think the area of that plot is three acres." But speaker B, certain of the accurate area, contradicts him by using the long tail.

FIGURE 12a. Low long obligatory tail.



eneo LAke ni eka *MBI I i.*

When the nuclear tone high, such as in the Rise nuclear tone, the tail will be as high as the pitch at the end of the nuclear tone; alternatively, there may be a Drop tail or a Mid tail.

(214) A akasema hataki kukuona tena.

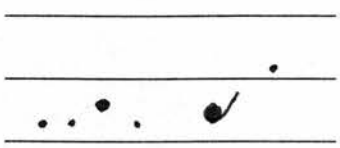
"she said she doesn't want to see you ever again."

B *akasema NIni* ?

"WHAT did she say?"

The High obligatory tail of the second *ni* in (214B) is illustrated in Figure 13.

FIGURE 13. High obligatory tail.



akasema N / n i.

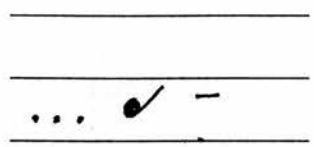
When a question such as that in Fig. 16 is asked with any degree of incredulity or disbelief at what has just been heard affirmed, the the Rising nuclear tone is followed by a sudden drop in the obligatory tail. The questioner's utterance, although formulated in interrogative form and appropriately delivered with a Rising nuclear tone, is not intended as a bona fide question seeking new information to be supplied. This appears to be what is signalled by the sudden drop.

(215) A nisingekuwa karibu, joni asingekuwa hai leo.
I-not-if-be near John he-not-if-be alive today
"if I hadn't been nearby, John wouldn't be alive today."

B *ilikuWAje?*
"what happened?"

Figure 14 illustrates the pitch movement of *je* in (215B) above.

FIGURE 14. Drop obligatory tail.



ilikuW A j e.

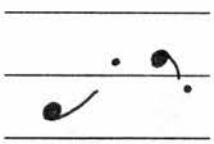
The Mid obligatory tail is found mainly after non-low ending nuclear tones. It occurs after the the Compound nuclear tones. this tail arrests the nuclear tone at just below mid. Its ending is, therefore, quite similar to the Drop obligatory tail we saw earlier.

(216) A juma alishinda mbio zake?
"did Juma win his races?"

B juma alishinda mbio zake *ZOte.*
"Juma won ALL his races."

It is illustrated by the syllable *te* in (216B) and shown in Fig. 15.

FIGURE 15. Mid obligatory tail after a RpF nuclear tone.



JUma alishinda mbio zake *ZOte.*

Finally, there is the Rising obligatory tail. Its occurrence is mainly associated with the Half Fall nuclear tone. The nuclear tone falls to about mid or slightly lower, where it is arrested by the rise of the obligatory tail. This rise is itself a limited one, reaching not much higher than just a little above mid.

It is associated with polite or non-abrupt affirmative utterances in much the same way as Halliday's Tone 3 is for RP (and most other accents of English). The context of (217) is as follows. A has just reurned home after several years away. On a visit to B's house, he is offered tea without sugar. After (218), B tells him the details of how nearly every consumer item is in short supply because the whole country was facing a bad economic climate.

(217) A hakuna sukari?

there's- not sugar

"is there no sugar?"

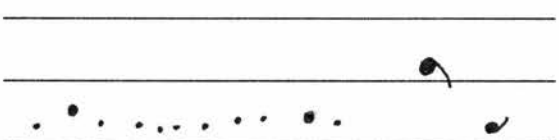
B suKAri *haionekani mara NYIngi.*

sugar it's-not-seen times many

"we don't see sugar often."

Figure 16 illustrates the pitch pattern of this obligatory tail.

FIGURE 16. Rise obligatory tail.



suKAri *haionekani mara N Y I n g i.*

3.6.2. Downstep in optional tails

However, not all utterances end with obligatory tails. This is because not all utterances are either single words or have their nuclear words in final position. On the contrary, the more common thing is for an utterance to have post obligatory-tail words. The second type of tail is, therefore, longer. It is also optional, in the sense that it is not obligatory for every Swahili utterance to have any additional words after the obligatory tail. Utterances (218B) and similar once above are just as natural as (200B) or (39B).

(218) A ulisema nani?

"who did you say?"

B *baba yangu mDOgo.*

"my YOUNger uncle."

Single word utterances and those with final nuclear words are evidence for an obligatory nuclear word, with a penultimate nuclear syllable (which presupposes an obligatory tail - the final syllable). In utterances like (219B) and (220B) those are also present. There are the nuclear words NDIYO - "yes" - and MZIMA - "whole", with their nuclear-syllables NDI- and -ZI-, which are the locations of their nuclear tones (N). Each nuclear word has its obligatory tail (T), ie -YO and -MA, respectively. But there is also more after the nuclear word: the obligatory tail -YO is followed by five words and -MA by one word. These additional words after the obligatory tail constitute the obligatory longer, optional tail.

(219) A juma alishinda mbio zake zote?

"did Juma win all his races?"

B *NDIyo,* JUma alishinda mbio zake ZOte.

"YES, Juma won all his races."

(220) A tatizo hilo limekuwepo kwa muda gani?

"how long have you had that problem?"

B ni *mwaka mZIma sasa.*

"it's been a whole year now."

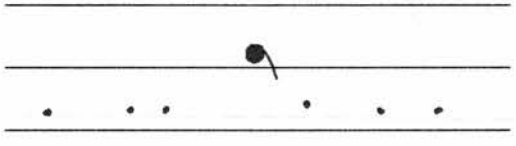
A relevant generalization here might therefore be stated something like (221). T, occurring at the end of every non-monosyllabic nuclear word, is the

obligatory tail syllable, and (t) the optional, longer tail syllables.

(221) T (t)

The effect of (t) on the intonation pattern is the tendency for any constituent accents and word stresses in the optional tail to be stepped-down from the nuclear tone. When there are no constituent and/or word stresses manifested in the postnuclear portion, the situation is as illustrated in Fig. 17. But, of course, the height of the level pitch on such an unaccented optional tail depends not only on nuclear tone type but also on whether the obligatory tail (T) ends low, high or mid. Wherever (T) ends - which in turn depends largely on the shape of (N), that will be pitch-level of the unaccented (t).

FIGURE 17. Unaccented optional tail.

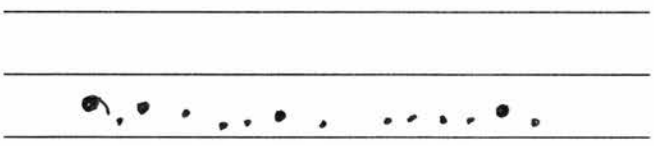


ni *mwaka m Z I m a s a s a.*

The step-down pattern is illustrated in Fig. 18. Whatever pitch-level (T) might have does not dictate that (t) begin at the same level. Thus, in Fig. 18, (T) ends low but (t) begins at a slightly higher pitch. However, the pitch of the constituent accents and word stresses manifested in (t) will tend to be lower than that of (N). Moreover, in the event that there are two more locations of

minor prominence, their respective pitches will get gradually lower. Consequently, the pitch on *'ju-* is slightly lower than the highest point of (N); the highest point of -'shi- is slightly lower than that of *'ju-*, and *'zo-* will have a lower pitch than the highest points of all the preceding three.

FIGURE 18. Downstep in optional tails (t).



NDIyo JU *ma ali'shinda mbio zake* ZO *te.*

3.7. Some Comparisons

The comparisons attempted in this Section are not only between the nuclear tones of English and Swahili; but also between the some salient features of the pre- and postnuclear segments of the intonation groups of the two languages. We begin by making a brief comparison between our findings and those of Maw and Kelly (1975).

It will be recalled that, of their six *tonic types,* only the first three were regarded as more frequent and, therefore, more important than the remaining three. In this comparative excerice, we shall therefore be concerned mainly with their **fall, drop** and **high level**.

The structure of the intonation group in English is represented by (222). It shows that, of the four elements - P (Prehead), H (Head), N (Nucleus), T (Tail), only the Nucleus is obligatory.

(222) (P) (H) **N** (T)

This sharply contrasts with the structure in Swahili, which is represented by (223). The prenuclear segment does not distinguish between prehead and head as English does. The up-step frequently encountered in the prenuclear segments of Swahili intonation groups occurs as a matter of course on locations of minor prominence.

(223) (p) (P) **N** - **T** (t)

We therefore distinguish only whether the prenuclear segment is made up only of the unstressed syllables of the nuclear word, or whether there is one word or more before the nuclear word.

Again, in a Swahili intonation group we distinguish between obligatory tail and optional tail after N. This is because the pitch patterns of T and (t) differ as shown in Sections 5 and 6, respectively. Gussenhoven (1984) makes an in-depth study of Tails in English, presenting a detailed classification into three different categories, each of which may have as many as five types.

Regarding the Nuclear Tone, we have shown that Swahili essentially distinguishes four main contrasts: Fall, Rise, Rise-Fall, and Rise-plus-Fall. But the fall has three subtypes: simple fall, half-fall and anticipated fall. Essentially Swahili and English do not differ as far as the fall is concerned. However, when it comes to the Rise, it is significant that Swahili has only a high rise, while English distinguishes between a low rise (Halliday's Tone 3) and a high rise (Halliday's Tone 2). Fall-Rise did not feature significantly in our data, but a

broader database will show that it occurs in Swahili speech.

It would therefore not be fair to suggest here that Gussenhoven's 'manipulation' of *Selection,* realized prosodically by Fall–Rise, is not relevant in Swahili. His Addition would, of course, correspond to the Swahili Simple Fall; Relevance Testing (Rise) could be regarded as close to the Swahili Rise, although it must be appreciated that the Rise in Swahili and English are qualitatively different.

Another significant difference between English and Swahili is the span of the tonal excursions. Pitch movements (rises and falls) in Swahili are characterised by a short span. The rise or fall is usually steep. As a result, they only have short duration from the beginning to the end of the fall or rise. In English, especially RP, the span of a rise or fall will usually be long in unmarked or neutral circumstances, but shorter in curt or otherwise marked contexts.

CHAPTER 4

READING INTONATION

4.1. Introduction

The three preceding Chapters have been concerned with intonational and prosodic phenomena in spontaneous conversation and other forms of spontaneous speech. We shall now turn our attention to spoken language produced by reading written texts aloud.

For Tanzanian users of English - and doubtless many other non-native learners and users of the language - the importance of reading aloud should not be underestimated vis a vis interactive spontaneous speech in the language. At any rate, in school situations - where the majority of such English users are to be found, reading aloud in English is almost as important as the use of the language in spontaneous conversational situations. The relevance and significance of examining reading intonational phenomena cannot therefore be overemphasised.

The intent of this Chapter is twofold. It attempts to make a preliminary study of reading intonation in Swahili; then it explores a number of salient similarities and differences between English and Swahili as far as intonation or prosody in reading is concerned. In order to achieve those objectives, the chapter focuses attention on three main areas. We shall now state these in summary only, since they will constitute the subject matter of later Sections of the chapter.

Firstly, the chapter looks at the segmentation of the reading texts used in the study. It is the segments thus identified and delineated that then constitute the domain in which are assigned linguistically significant intonational and prosodic features. For the reasons outlined in Section 3, the boundaries of the

intonation segments (or chunks, groups, etc.) were found to correspond closely with the external criterion of pause.

Secondly, the assignment of nuclear accents within each of the intonation groups, segments or chunks is investigated. Thirdly, we also attempt to identify and characterise the tone types that realize those nuclear accents. These subjects are treated in Sections 3, 4 and 5, respectively, for the English and Swahili readings of Tanzanian subjects. Finally, in Section 6, we also adduce some evidence from English native speaker readings of the English text in order to then compare the findings therefrom with the findings for the Tanzanian readers.

We begin, however, with some brief and general descriptive remarks on the data from which the substance of the subsequent Sections of this Chapter is derived. The next Section, therefore, provides information on the source texts for the data; the subjects who were recorded, and the analysis method employed.

4.2. The Data

The bulk of the data was derived from two sets of readings recorded by thirty Tanzanian undergraduates, all in their first year of university. The first set is their reading of the well-known IPA passage, *The North Wind and the Sun* (henceforth **NWStz**); the second set that of its Swahili translation, *Upepo na Jua* (hereafter **UNJ**), as found in the IPA booklet.

In most cases, the passages were read at a moderate tempo. The recording of both texts was done at one sitting for each of the thirty readers. The recording environment was not entirely noise-free. However, the resultant recordings, although not sufficiently 'clean' for instrumental purposes, were adequate for auditory analysis.

Finally, for the purpose of comparison with both UNJ and NWStz in the discussion, especially in Section 6, recordings made by seven speakers of some native accents of English for the English passage were also analysed. Examples from this data category will be denoted by NWSns. The native accents included are, broadly, from Scotland, Sheffield, Liverpool, Dublin and an Australian accent.

Of the three Scottish speakers, one had obvious RP influences in both pronunciation and intonation. The data in NWSns was originally collected not for the purpose of the present investigation. Obviously, therefore, it is in no way either quantitatively as extensive nor is it as representative as it would otherwise have been. The consequent exclusion of RP was therefore not in any way intentional.

Each of the readings was subjected to auditory analysis and rendered into orthographic transcription. Segmentation was arrived at through the operation described further in Section 3 below. Then all the accented syllables were marked. Wherever an accented syllable was perceived as being relatively more prominent than those neighbouring it, it was marked with a ['] at its beginning. These all corresponded with stressed syllables. The relative prominence between those accents was then given particular attention. In this way, all the nuclear accents were marked. The pitch changes leading immediately up to each nuclear syllable and away from it were also indicated (see Appendices V, VI, and VII). These pitch movements will be discussed under Nuclear Tones in Section 5.

What is transcribed in Appendices VIII, IX and XI is not derived from the respective readings of all the subjects recorded for NWStz, UNJ and NWSns. The data in those Appendices are derived from samples selected from each of the three subject groups (UNJ, NWStz, NWSns). For NWStz, the sample consisted of 17 out of the total 30. But the sample was 20 subjects out of the

30 for UNJ. Of the seven subjects recorded, data from only five was included for consideration in NWSns (and for inclusion in Appendix XI). Percentage-wise, this means that NWStz represents almost 57%; UNJ represents about 67%, and NWSns well over 71% of the subjects recorded for each respective text. A statistical test was carried out to evaluate the levels of significance in the correlations between the different prosodic parameters analysed. The results are in Appendix XII.

It should not for one moment be thought that the data included in each of those three samples were perfectly homogeneous or identical in all respects for the main parameters considered (ie segmentation, nuclear accents, and nuclear tones). Those readings manifesting very considerable variations from what is transcribed in Appendices VIII, IX, and XI were excluded from the the respective samples. This means that 13 from NWStz, 10 from UNJ, and two from NWSns were not excluded from samples. However, some of the variations found in the excluded data are referred to or explained at relevant points in the discussion (some are the subjects of footnotes).

Each of the three Appendices, VIII, IX and XI, is therefore to be seen as being derived from one of the three sets of selected samples of the transcribed data. Each Appendix represents an amalgamation of all the clusters of closely similar realizations of segmentation, the placement of nuclear accents, and the principal pitch changes in the nuclear accents and stresses in the tails.[13]

The Tables in the subsequent Sections of this Chapter therefore refer to the data transcribed in the Appendix(es) relevant to the discussion at that particular point. The proportions in each Table thus speak of the averaged performances of the readers in the sample represented in the Appendix(es) in question.

4.3. Segmentation

Intonational literature generally chunks connected speech into units or segments which then become the domains within whose boundaries the various intonational features being investigated are assigned. Such segments are referred to by terms by different writers. The most frequent ones are: *tone group* (eg Halliday (1967, 1970, 1985)), *intonation group* (Cruttenden 1986), *pause defined unit* (Brown et al 1980), and other terms such as 'breath group', 'sense group', 'intonational phrase', etc. It must, however, be appreciated that such terms – although generally used to refer to such intonational segments, are by no means synonymous.

In the previous chapters, the locations of nuclear accents and the tones that realized them were studied mainly within *focus domains*. That was possible then because focus domains were clearly identifiable in the interactive or conversational speech that was under investigation. The segmentation of the texts used in this chapter could not be based upon similar grounds, given that the present texts are narrative in form.

It was therefore imperative that a different method be adopted. The most consistently occurring feature in the readings was the *unfilled pause,* that is, where the reader briefly fell silent between any two stretches of speech. Such pauses were not accounted for; it being assumed that the reader might have needed to pause for breath and/or to process the speech implications of the stretch of text to follow the one just spoken.

The procedure used can be summarised as follows. An attempt was made to identify all accented syllables. Then the pitch movements on each of those accents were studied. Finally, wherever the existence of a pause was auditorily perceived, it was indicated in the transcription with [+].

Each pause was compared with those in its neighbourhood. The length of pauses varied from one reader to another and from one location to another for the same reader within a given text. However, the relative degrees perceived auditorily at any given location in the text were classified into three types: short, medium and long. They are represented here by [+, ++, +++], respectively. It was found that each of the chunks thus segmented by pauses contained one or more accented syllables. One of the accents - in those cases where there was more than one - was designated the nuclear accent of that group (see Section 4, below).

Obviously, this means that we are leaning heavily on an external (as opposed to internal) structure criterion (see Cruttenden 1986) for segmentation (see Section 6 below). But this is also supported by *internal structure* criteria. For example, most of the chunks - apart from being segmented by pauses - also meet the following internal structure criteria: they contain one or more accented syllables, and there are considerable pitch changes over those accents. In addition, the boundary between the third and fourth intonation groups in Appendix XI was determined chiefly by internal structure criteria (see Cruttenden 1986:42 - 45).

It is therefore justifiable to say that the segments we have identified are not merely pause-groups fortuitously resulting from regularly repeated unfilled hesitation. They are without doubt bona fide intonation groups. The segments thus demarcated in the data are intonational units of a status not different from those in the literature referred to above by the by all those different terms (tone group, intonation group, etc.).

We shall simply call them 'intonation groups' after Cruttenden. We deliberately avoid the widely used Hallidayan term *tone group* because, although the segments identified here - like Halliday's tone groups - do contain one and only one nuclear tone (ie his *tonic*) each, the broader implications of Halliday's

system of *tonality* (which is responsible for chunking the utterance into tone groups) are not necessarily all applicable here (neither are the implications of such other terms as *PDU, sense group*, etc.).

The systematicity of the occurrence of the delineating pauses in the data is more or less consistently maintained throughout the data. Long pauses are generally reserved for the final position of each utterance or sentence in NWStz and UNJ. We provide some examples from those texts in (224) – (228) below.

(224) ++ kuwa NAni mwenye NGUvu kupita mweNZIwe +++

that who possess strength more-than his-mate

(225) + aliyeKUwa amevaa JUba +++

he-that-be wear cloak

(226) ++ should be con'sidered 'stronger than the OTHer +++

(227) + the 'north 'wind 'gave up the atTEMPT +++

(228) + u'pepo ukaKAta taMAa +++

wind it-lost hope

There is, of course, no unanimity by all the 30 readers as to where the boundaries of the segments are located. The following examples will illustrate this with just one of the variations that occurred. While 75% of the readers of UNJ produced what is transcribed in (224) above, the remainder produced two separate intonation groups, as transcribed in (224a) and (224b).

(224a) ++ kuwa NAni mwenye NGUvu ++

(224b) ++ kupita mweNZIwe +++

The medium and short pauses (++, +) are found utterance or sentence internally. The medium pause characteristically occurs in intermediate positions of long syntactically complex sentences such as (229). It also tends to occur immediately before the last clause in a complex structure consisting of several clauses [(230) - (232)]. Here (229) is the only exception in the data for NWStz transcribed in Appendix VII, where there is a short pause between the penultimate and final clauses of the sentence.

(229) ... ++ 'when a traveller 'came aLONG + 'wrapped ...

(230) ... ++ the 'sun was the 'stronger of the TWO +++

(231) ... ++ NDIye mwenye NGUvu +++

is-he who- possess strength

(232) ... ++ 'jua lina NGUvu kuliko YEye +++

sun it- has strength more him

The short pause, on the other hand, is an internal break within a single clause or between two clauses of a sentence - found either between the beginning of the text and a medium pause if there is one [(233), (234);] between a medium pause and a long, final pause [(235), (236),] or between another short pause and

a medium or final pause [(237), (238).] Like the medium pause, the short pause does not occur in sentence final position.

(233) The 'north 'wind and the SUN + were dis'puting ...++

(234) uPEpo + ulikuwa uki'bishana na JUa ...++

wind it-be it-be with sun
disputing

(235) ++ NDIye + mwenye 'nguvu +++

is-he- has strength
who

(236) ++ na kwa HIvyo + u'pepo ...

and therefore wind

(237) + KIla ukizidi kuVUma +

every- go-on to-blow
time

(238) + lina NGUvu kuliko YEye +++

it-has strength more- him
than

There are certain correspondences between the three types of pause and the punctuation marks in the written texts from which the data originated (Table 1). Tables 1 and 2 are derived from samples of the readings of NWStz and UNJ (Appendices V and VI), respectively. Table 1 is from a sample of 20, and 2 is from a sample of 25 of the 30 individual readings. Where the correlations between the two parameters of pause and punctuation varied from those from which the two Tables were eventually derived, the reading was excluded from

the sample.

The closest relationship is, in particular, between the long pause and the full stops. Every single occurrence of the four full stops in UNJ appears to trigger a long pause in all the readings. Similarly, all five full stops in NWStz come out as long pauses. But long pauses also result from the occurrence of semi-colons in the orthography [(239), (240)].

(240) + did the 'traveller 'fold his 'cloak aROUnd 'him +++

(241) + msa'firi huzidi kuliBAnza juba LAke +++

traveller go-on to-tighten cloak his

Twice in each text, the occurrence of a comma also triggered a long pause. But the four separate instances indicate that the syntactic structure did require a full stop.[14] This intuitive realization therefore obviously led to the readers judgment as to the appropriateness of a long pause. Medium pauses are rarer than either long or short pauses. There are five in NWStz and only four in UNJ.

TABLE 1. Pause and Punctuation in NWStz

	PUNCTUATION MARKS				
PAUSE	0	,	;	.	TOTAL
+	8	0	0	0	8
++	4	1	0	0	5
+++	0	2	1	5	8

Although the occurrence of pauses frequently corresponds with the occurrence of punctuation marks, it is not possible to make a general statement for all the three types of pause. Medium pauses occur where there is no overt punctuation mark, but where the readers judge that the structure is complete, and that - due to the length anticipated of the material following it - it is the right place to pause, as (242) - (244) clearly show.

(242) uPEpo + ulikuwa ukibi'shana na JUa ++ kuwa ...

wind it-be it-be- with sun that
disputing

(423) MAra msa'firi aliVUa juba LAke ++ na kwa ...

suddenly traveller took- cloak his and
off

(244) + in 'making the 'traveller 'take his

'cloak OFF ++ should ...

Short pauses tend generally to be as frequent as long pauses in both NWStz and UNJ. The occurrence of short pauses appears to be far from random. They do not, in either UNJ or NWStz, occur where there is a punctuation mark in the text.

TABLE 2. PAUSE AND PUNCTUATION IN UNJ.

	PUNCTUATION MARKS				
PAUSE	0	,	;	.	TOTAL
+	7	0	0	0	7
++	4	0	0	0	4
+++	1	3	1	3	8

The most notable feature in the manner of segmentation is the length of the chunks and, hence, of the intonation groups. In the readings of both UNJ and NWStz, the intonation groups are relatively short. On average, any of the 20 intonation groups of UNJ will consist of four words or less. The longest of these is about six words, and the shortest only one word long.

By comparison, the 21 intonation groups of NWStz are marginally longer. Although the shortest has only one word - as in UNJ - the longest may contain up to ten words. The average length of an intonation group in the English reading of Tanzanians is approximately five words. A ***phi*** statistical test (see Appendix XII) indicates that this relationship between pause and punctuation in the process of chunking the NWStz and UNJ texts is significant (ie as opposed to a mere coincidence).

Having considered how the texts are chunked into intonation groups in UNJ and NWStz, we now turn our attention to an examination of the distribution of accents in the intonation groups, and the locations of nuclear accents in each of the groups.

4.4. Nuclear Accent Placement

4.4.1. Intonation groups in NWStz and UNJ

We begin with a consideration of the intonation groups, which constitute the domains in which nuclear accents are assigned. Both NWStz and UNJ manifest two types of accent: major accents in the domain, that we shall refer to as, *nuclear accents* and the others as constituent accents or word stresses. But the evidence from the two texts indicates that nuclear accents are assigned in different types of domain in each of the two texts.

In NWStz, every final (ie long or medium) pause marks the end of an intonation group. More precisely, there is a major accent on the stressed syllable of the word immediately preceding every single medium or long pause in the data. But, of course – as already pointed out – many intonation group boundaries also fall at short pauses. The only exceptions are *they aGREED 'that* + and (245). In both of these cases the major accent – nuclear accent – falls on the lexical word that precedes the last structural word. It should be noted that, although the final structural word is accented, it does not qualify for nuclear status. But, even here, the nuclear or major accent is clearly close to the end of the group – being located on the rightmost lexical item.

(245) + did the 'traveller 'fold his 'cloak aROUND 'him +++

If we define an intonation group rather loosely as that chunk of utterance containing one and only one nuclear accent, the intonation groups in NWStz may be demarcated by a ++ or +++ at one end and by a + at the other [(246) – (248)], or occasionally with + on both sides (249). Intonation groups may be

regarded as accent domains, where the term 'accent domain' is a sort of short form for 'nuclear accent domain'.

(246) + were dis'puting 'which was the STRONGer ++

(247) +++ they aGREED 'that +

(248) ++ the 'sun was the 'stronger of the TWO +++

(249) + the 'one 'who 'first sucCEEDed +

Some intonation groups can be very short; others quite long. There are short intonation groups consisting of only one word (*+ THEN +*); two words (250); three words (247); four words (251). But there are also longer ones containing eight words (252); and the longest one with ten words (253).

(250) +++ and SO +

(251) The 'north 'wind and the SUN +

(252) ++ the 'north 'wind was ob'liged to conFESS 'that ++

(253) + 'then the 'north 'wind 'blew as 'hard as he COULD +++

Generally, words occurring in final positions of intonation groups are lexical items (254). This particularly applies to those groups in which the right hand boundary is marked by a long pause. But there are also intonation groups where the final words are not lexical - including some with long pause right boundary marker (255), and others with short pauses at the end (256). An interesting feature to note here is that, in all the Tanzanian readings of NWStz, an embedded complementary clause is always segmented in such a way that

the pause never occurs before *that* it always follows it. As examples of this we have (247) and (252). For contrast with the native speaker readings in this respect see Section 6 below.

(254) STRONGer, CLOAK, atTEMPT,
WARMly, CLOAK, conFESS, TWO

(255) OFF, COULD, 'him, 'that

(256) 'that, SO

Intonation group boundaries in UNJ, like those in NWStz, also correspond with pauses of varying length. As in NWStz, UNJ intonation groups are also co-extensive with complete syntactic structures. Each of the 20 intonation groups into which the text is chunked consists of a stretch which is delimited by pauses before and after it. But each such chunk is also syntactically definable and semantically functional. Thus, syntactically, there are whole clauses, incomplete clauses, phrases and even single words. Complete clauses form the bulk of the total number of groups. Some examples of the nine intonation groups made up of whole clauses are shown below in (257) - (259).

(257) uPEpo + ulikuwa ukibi'shana na JUa ++
wind it-be it-be-argueing with sun

(258) + ndio kwanza msaFIri huzidi kuliBAnza juba LAke +++
was when traveller increased to-tighten cloak his

(259) + JUa + lina NGUvu kuliko YEye +++

sun it-has strength more- him
than

Of the incomplete clauses which make up some (like (260) and (261)), of the intonation groups, some are embedded clauses; but others such as (262) - (266) are not.

(260) ++ kuwa NAni mwenye NGUvu kupita mweNZIwe +++

that who was stronger than the other

(261) + atakayemVUa juba 'kwanza msaFIri ++

he-who-disrobes- cloak first traveller
him-of

(262) +++ walipaTAna kuwa +

they-agreed that

(263) +++ laKIni + KIla ukizidi kuVUma +

but every- it-increase to-blow
time

(264) +++ haikupita MUda +

it-didn't-pass time

(265) + u'pepo ukaKIri kuwa +

wind it- that
confess

(266) +++ hata mwiSHOwe ++

even at-the-end-of-it

The remaining intonation groups, (266) - (269) are phrases, and - in a single instance - only one word (270).

(267) + MWIsho wa nguvu ZAke +++
(to-)end of strength his

(268) + u'pepo ukaKAta taMAa +++
wind gave up attempt

(269) ++ na kwa HIvyo +
and therefore

(270) + MAra +
suddenly

4.4.2. Accent placement in NWStz and UNJ

We now focus attention on the placement of nuclear and other accents within the intonation groups in NWStz and UNJ. But the central interest lies in the nuclear accents. The accents occurring in NWStz can be divided into four different groups. Some of those accents occur in the final positions of the intonation groups in which they occur; others in non-final positions. Some of them are found in lexical words; others in non-lexical words. The distribution of the accents in NWStz is summed up in Table 3.

Table 3 is derived from a sample of 25 of the 30 readers of NWStz; that is, well over 80%. The sample consists only of those readings where there was unanimity in the correlations between the parameters investigated in Table 3.

The readings which differed from those correlations were excluded from the sample. But reference is made to them in the discussion.The same method was applied in selecting the sample from which Table 4 was derived. However, in Table 4, the sample consisted only of 20 readings out of the total 30; that is, almost 70%.

TABLE 3. Nuclear and minor prominence in NWStz.

	ACCENTS		
	Nuclear	Non-nuclear	TOTAL
Domain Final	18	2	20
Domain Nonfinal	3	41	44
Lexical	17	39	56
Non-lexical	4	4	8

The nuclear accents, of course, constitute only a small part of all the accents in the data. When all the nuclear and non-nuclear accents in the entire text are taken into consideration, about one third are group final, while the remainder are in different locations in the intonation groups. That means that, of the total accents occurring in NWStz, only about a third are nuclear accents. Nuclear accents constitute the bulk of all the accents found in final positions of the different intonation groups in NWStz. The nuclear accents constitute 90% of all the accents in group final position. By comparison, nuclear accents very rarely occur in non-final positions of intonation groups.

But the bulk of the accents occurring in non-final positions of intonation groups are non-nuclear accents and are, therefore, constituent accents or word stresses. Altogether, well over 95% of the non-nuclear accents occur in non-final positions. Accents in any given intonation group are more likely to

fall on the stressed syllables of lexical than of non-lexical items. Four fifths of all accents in NWStz fall on lexical words.

When the comparison is made between the occurrences of nuclear and non-nuclear accents, the balance is again heavily in favour of lexical items. Well over four fifths of all the nuclear accents are found on the stressed syllables of lexical items. When all the accents in the text are taken into account, less than one fifth occur on non-lexical words.

Even the most cursory look at the data will show that there is a large proportion of accented to non-accented words in this relatively short text. Of all the 102 words in NWStz, 64 are accented (21 of those accents being nuclear). This means that, on average, virtually every other word in the text carries a word stress, constituent accent or a nuclear accent. The overall effect of the text being so extensively accented is that the reading sounds overemphatic and, perhaps unintentionally, deliberate and formal.

TABLE 4. Nuclear and minor prominence in UNJ.

	ACCENTS		
	Nuclear	Non-nuclear	TOTAL
Domain Final	7	11	18
Domain Non-final	13	14	27
Lexical	18	17	35
Non-lexical	2	8	10

As in NWStz, nuclear and constituent accents (and word stresses) in UNJ occur on both lexical or content words and on non-lexical or function ones. But in UNJ, only those function words of two syllables or more are accentable. Just

as in NWStz, accents in UNJ may also occur on both final and nonfinal positions of intonation groups.

Because of the language-specific accent rule of Swahili (that is, only a finite or closed set of nonlexical words in Swahili are accentable - eg *'je,* a question tag, *si,* "is-not"), the proportion of accents on lexical words to nonlexical ones is extremely high here - 95% to only 5%. But, naturally - as in NWStz, the proportion of lexical words that carry accents that are non-nuclear is far greater than that of nonlexical words that do. Clearly, this is because there is only one nuclear accent per intonation group, whereas there can be even up to three constituent accents (or one or two constituent accenst and one or more word stresses) in a group.

Unlike those of NWStz, however, the nuclear accents of UNJ fall chiefly on words in nonfinal positions of intonation groups. Well over 77% of the nuclear accents occur in nonfinal positions. Of all the group final accents, only one fifth are nuclear. This is almost the exact opposite of the situation in NWStz, where nuclear accents - as a general rule, occur towards the end of the intonation group.

The reason for this preponderance of nonfinal nuclear accents in UNJ is accent subordination, which is responsible for determining the locations of nuclear accents in Swahili intonation groups. In an intonation group where there are two or more accents, only one of them will become the nuclear accent (by definition). The nuclear accent is distinguished from other prominence locations in the intonation group by its pitch movement, which makes it more prominent than the rest of the intonation group.

However, to this must be added the difference in stress. Strictly speaking, it is the combination of heavier stress and greater pitch jumps or movements that distinguish nuclear accents from the rest of the intonation group. In an

intonation group, the weaker accents group themselves around the major accent that then becomes the nuclear accent. The constituent accents and word stresses are thus subordinated to the major or nuclear accent in a hierarchical order of weaker (w) to stronger (s). This subordination is achieved in different ways in the 22 intonation groups of UNJ.

The intonation groups in UNJ can be divided into three groups: those with one accent; those with two, and those with three accents. We shall now attempt to discuss each of these in turn.

(271) +++ MAra +
suddenly

(272) +++ walipaTAna kuwa +
they-agree that

(273) +++ haikupita MUda +
immediately

One of the intonation groups containing only one accent has itself only one word (270). In the single word intonation groups and those with two words but only one accent - such as (271) - (275), there being only one accent, subordination is straightforward. The only accent in the intonation group, prosodically dominating the remaining syllable or syllables, becomes the nuclear accent. The subordination is thus merely between the syllables of the same word - the unstressed one(s) to the stressed (Fig. 1).[15]

FIGURE 1. Subordination in a single-word intonation group.

But there are also intonation groups made up of two words, only one of which accented. In such cases, it is the unaccented words that become subordinated to the accented one (Fig. 2). This is similar to subordination in the single-word groups. In single-word groups, the unstressed syllables of the only word are subordinated to its stressed syllable. In the groups with two or three words, only one of which is accented, the unaccented words - having also lost their lexical stresses - are weaker and therefore become subordinated to the accented word.

(274) +++ hata mwiSHOwe +
even finally

(275) ++ na kwa HIvyo +
and therefore

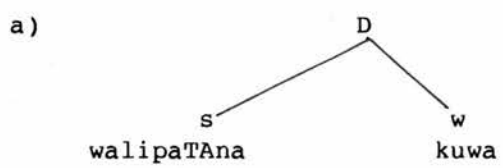
(276) +++ haikupita MUda +
it-didn't-pass time

The hierarchical structure of the subordination of prominence is what is

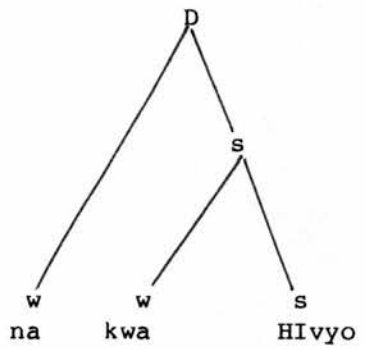
illustrated by trees such as those in Figs. 1, 2, 3, etc. When there is only one accent in an intonation group, the nuclear accent is the s-node immediately dominated by D (as the Figures clearly illustrate).

The unaccented syllables are subordinated to the accented one - the w-nodes to the S-node - in Fig. 2. In intonation groups with more than one word, the stressed syllables of the unaccented words (predictably on the penultimate syllable) are subordinated to the s-node of the accented one. In the data, (270) is the only example of a single-word single accent intonation group. Intonation groups with only one accent, but containing two or more unaccented words form less than a quarter of all the 20 intonation groups of UNJ.

FIGURE 2. Prominence subordination in single-accent groups with two or more words.

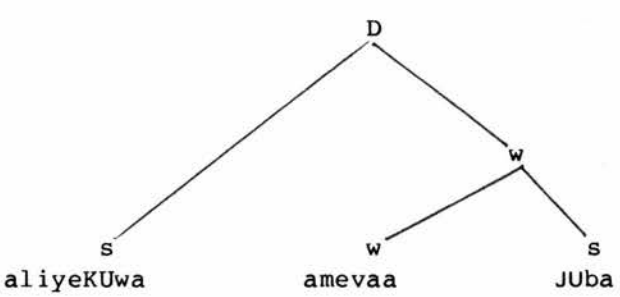


b)



In intonation groups with two accents, nuclear accent placement by subordination operates in two ways. In certain cases, like the example in Fig. 3, the nuclear accent is the s-node immediately dominated by D. These make up almost one third of the intonation groups in UNJ.

FIGURE 3.



But, in many other intonation groups containing two accents, the situation is not so straightforward. It all depends on how many constituent accents there are in the utterance in question. Clearly, subordination in two-accent groups

(ie where there are two constituent accents) is more complex than in those with two accents. Within two-accent groups, however, two degrees of complexity can be distinguished. The first degree, as we have just seen, is that found in groups where the nuclear accent is the s-node immediately dominated by D. Next in degree of complexity is the placement of nuclear accents in other intonation groups containing two accents - such as (277) and (284).

Since only one of the two accents can become the nuclear accent in its respective intonation group, the reader obviously had to make a choice between the two. The crucial question, therefore, is what essential factors govern, guide or underlie such a choice. To attempt to answer that question, let us consider the above examples from the data.

They can, in fact, be divided into three groups. Into the first group go the intonation groups where the nuclear accent falls on the Predicate. In this category we have (277)- (281).

(277) ++ NDIye mwenye NGUvu +++
is stronger than-the-other

(278) + huzidi kuliBAnza juba LAke +++
closely fold cloak his

(279) + u'pepo ukaKIri kuwa +
wind confessed that

(280) + aliyeKUwa amevaa JUba +++
he-who-was wearing cloak

(281) + msafiri aliVUa juba 'lake +++
traveller took-off cloak his

Into the second go those intonation groups with the nuclear accent on the Condition. Two examples fall into this cagetory: (282) and (283).

(282) + MWIsho wa nguvu ZAke +++
at-end of strength its

(283) +++ lakini KIla ukizidi kuVUma +
but every-time it-more to-blow

Into the third group go those where the nuclear accent is on an Argument. There are two examples of this group: (284) and (285).

(284) + ndio 'kwanza msaFIri +
it-is-that first traveller

(285) +++ uPEpo ukaanza kuVUma +
wind started to-blow

It appears therefore that the subordination of prosodic prominence is based upon the subordination of one or more constituents contained in the intonation group in question to another constituent in the same group. This would suggest the existence of some sort of hierarchical order between constituents occurring in an intonation group. Although the evidence is by no means conclusive, we can hazard the following generalization. In intonation groups containing sequences of Predicate and Argument (PA) or vice versa (AP) or even (APA) - as in (277) - (281), the prominence hierarchy is such that the Predicate becomes the more prominent in the intonation group, and any Argument preceding or following it is subordinated.

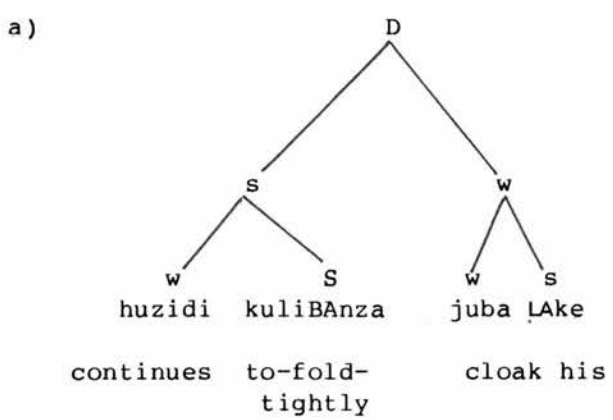
However, there are obvious exceptions to this, as (284) and (285) above clearly

show. The explanation appears to be that the Argument takes nuclear prominence in the group when it (the A) is more informative than the Predicate. This may either be because the Predicate is not a content word or because the Argument contains new and therefore focused information.

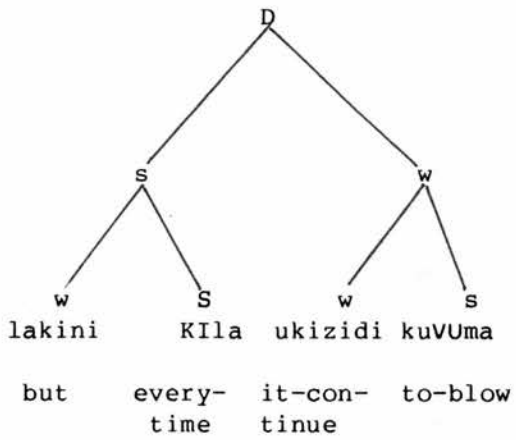
The abverbials *mwisho* – "end" – and *kila* – "every" – are powerful and easily attract focus and, consequently, the nuclear accent in the intonation groups in which they occur. Therefore, with a preceding Condition – as in (281), the nuclear prominence is shifted from the Predicate in favour of the more intensive Condition. The intensity of adverbial Conditions such as *MWIsho* (282) – "at the end", "finally" – also tends to attract the nuclear accent.

Subordination in intonation groups with two accents can be illustrated as shown in Fig. 4. It will be seen that, when there are two accents in a group, the nuclear accent goes to that word containing the s-node dominated by another s-node, which is itself dominated by D. In other words, there are consecutive s-nodes between the nuclear accent and D.

FIGURE 4.



b)



So far we have seen the distribution of nuclear accents in intonation groups containing only one or two accents. The highest number of accents in a group in UNJ is three. We shall now consider these. There are six cases each of which has three accents, but they are analysable into two types.

In two of these intonation groups the nuclear accent is on an Argument. They are those in (288) and (287).

In these two examples, the nuclear accent is at the beginning of the intonation group in the first case, and at the end in the second. In (287) we have the opening intonation group of the passage. Two of the main 'characters' in the passage - the Arguments *upepo* ("wind") and *jua* ("sun") - are both introduced for the first time and therefore accented. The nuclear accent goes to the Argument in initial position while the final one, although also accented is downstepped.

In the second example, (287), the nuclear accent is on the last of the three accents in the group. What is significant here is that the nuclear accent goes to the third of the Arguments that is the third of the main 'characters' of the

narrative - *msafiri* ("traveller"). Our prediction in the APA/PA sequences in (286) and (287) would place the nuclear accent on P in both cases. But, obviously due to the focal importance of those particular Arguments, the nuclear accent had to shift away from the less focal to the more focal.

(286) uPEpo ulikuwa ukibi'shana na JUa kuwa ++

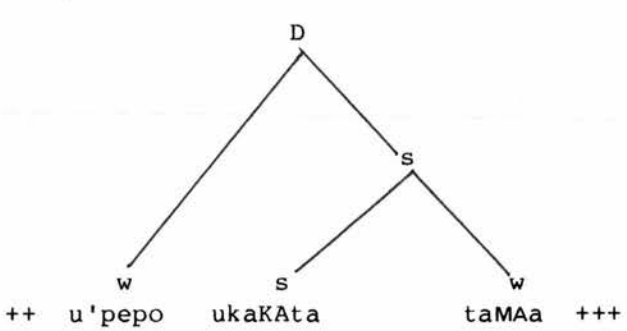
wind it-was arguing with sun that

(287) + atakayemVUa juba 'kwanza msaFIri ++

he-who-will- cloak first traveller
from

The remaining intonation groups have their nuclear accents on the Predicate [(288), (289), (291)]. This is in keeping with our prediction. (68) is, however, a special case where there are only three words in the group, all of them accented.

FIGURE 5.



This presents a slight problem in the representation (Fig. 5). Since all three words are accented, we would have to represent them as the anomalous sequence s-s-s. However, since the two Arguments - **u'pepo** ("wind") and

ta'maa ("desire") - are in actual fact subordinated to the Predicate, their accents have to be represented as 'weak' and that on the Predicate - *ukaKAta* - as 'strong'. In this way, subordination relations concur with the relational requirements between the nodes of the tree.

(288) +++ JUa likaanza kuNG'Ara kwa uKAli +++

sun it- started to-shine with strength

(289) ++ u'pepo ukaKAta taMAa +++

wind gave-up desire

(290) ++ NAni mwenye NGUvu kupita mweNZIwe +++

who has strength more- than his-mate

(291) + JUa lina NGUvu kuliko YEye +++

sun has strength more- than him

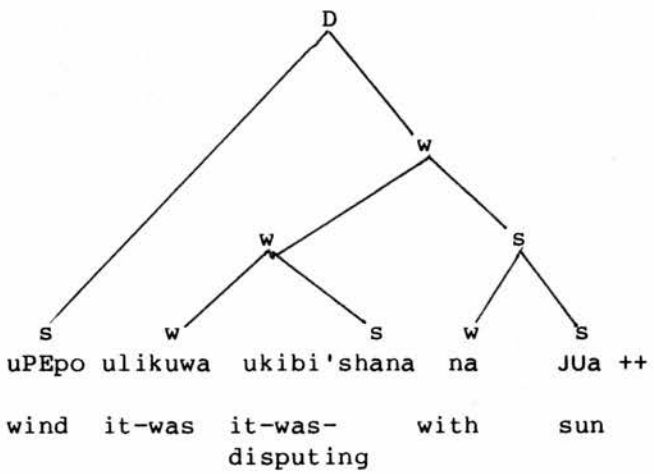
(292) ++ u'pepo ukaKAta taMAa +++

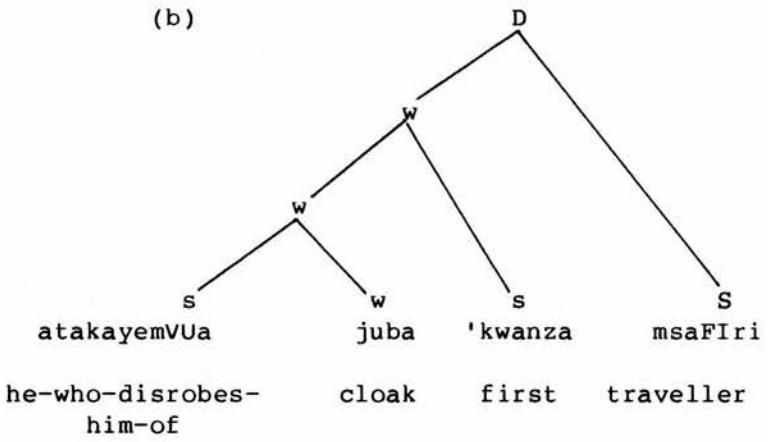
wind it-gave- up desire

Examples such as the above permit the assignment of the nuclear accent to be represented in one of two ways. In some of these (like (286), (288), (289), (290)), the nuclear accent is on the s-node dominated by the highest s-node in the group; in others - such as (287), the nuclear accent is on that s-node which is immediately dominated by D. Fig. 6 illustrates the subordination hierarchy in the assignment of nuclear accents in those intonation groups. The

nuclear accent is the s-node branching off uninterrupted from D, that is Liberman and Prince's *Designated Terminal Element* (***DTE***).

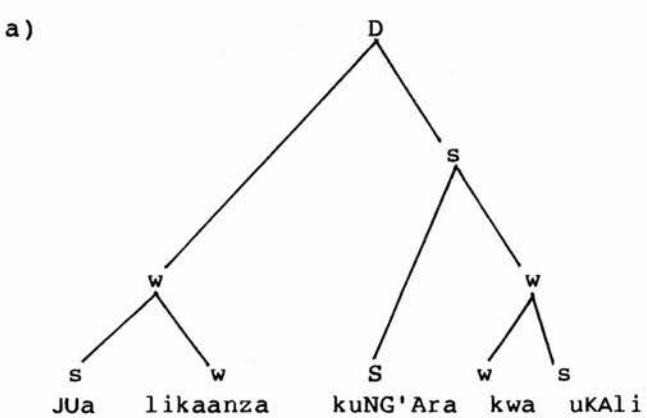
FIGURE 6.

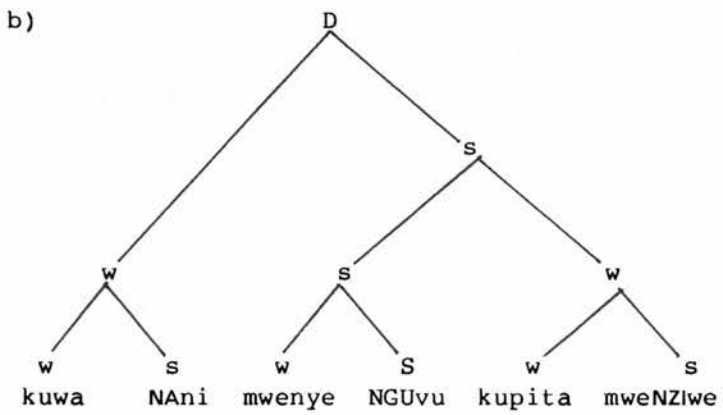




In other intonation groups with three accents, the nuclear accent assignment may be represented as in Fig. 7. The nuclear accent is that s-node which is dominated by the highest s-node branching from D, without an intervening w-node.

FIGURE 7.





Therefore, in summary, we can state the following. In single-word intonation groups, and in other groups where there is only one accent, the one accent in the group becomes unarguably the nuclear accent. In intonation groups where there are two or three accents (which is the greatest number of accents in a group in the data), the nuclear accent will generally fall on the Predicate. If there is a Condition before the Predicate, it will attract the nuclear accent. However, the nuclear accent will go to an Argument should this have greater focal importance than any of the other constituents in the intonation group.

But, in the event that there are two or more such focused Arguments in the group, the nuclear accent will be located on the leftmost Argument and the other(s) will be downstepped. Thus, the nuclear accent assignment in UNJ is related to such semantico- pragmatic factors as information focus. But it also has structural associations in that, when there are two or three accented words in an intonation group, the one or two constituent accents in the group will be hierarchically subordinated to the nuclear accent.

4.5. Tone

Many of the intonation groups (D) in the readings, like those in the data for the previous Chapters, can be divided into three segments (293). However, the tails in UNJ, just like those in the Swahili data in the previous Chapters, are of two kinds. An obligatory one-syllable tail (T) occurs at the end of every nuclear word (ie consisting of the final syllable).[16]

(293) **PRENUCLEAR – NUCLEAR – TAIL**

Where the nuclear word is followed by one word or more, a long, optional tail (t) occurs (in addition to the obligatory one, T). But only the first type of tail is found in *+++ na kwa Hlvyo +*; both occur in *+++ huzidi kuliBAnza juba* LA*ke +++*. In this Section we shall be concerned chiefly with the pitch changes of the nuclear tones realizing the nuclear accents of UNJ and NWStz. But we shall also refer to the boundary tones used in the tails.

The nuclear tones used in the two readings are of three main types: Fall, Rise and Fall-rise (eg *STRONGer* – Appendix V; *msaFlri, kuVUma* – Appendix VI). There is no Rise-Fall nuclear accent. But the Fall may be a simple fall (F); a half-fall (HF) or an anticipated fall (AF). The Rise may be a high rise (HR) or a low rise (LR). The Rise-fall may be a simple rising- falling tone (RF) or a Rise-plus-Fall tone (RpF). The tones realizing the nuclear tones of UNJ and NWStz are summed up in Table 5. The proportions in Table 5 are derived from a sample of 23 readings for UNJ and 26 for NWStz. The method of selection is similar to that used in selecting the sample for Tables 1 – 4. The wider significance of Table 5 will be exploited in Section 6 below.

TABLE 5. NUCLEAR TONES IN UNJ AND NWStz.

	FALL			RISE		RISE-FALL	
	F	HF	AF	HR	LR	RF	CRF
UNJ	17	0	0	1	0	0	0
NWStz	12	0	0	4	3	0	0

In UNJ, a nuclear tone is most likely to be realised by a simple high falling tone - that is, falling from high to low in the reader's normal pitch range. This occurs in 94% of the nuclear tones in Appendix VI. The simple falling tone is used both on nuclear words that are lexical (294) as well as those that are nonlexical (295).

(294) uPEpo, NGUvu, walipaTAna, kuliBAnza, mwiSHOwe, MAra, MUda, MWIsho, kuNG'Ara

(295) NDIye, HIvyo

Only rarely is a nuclear accent realised by a high rising tone - from close to the bottom of the reader's normal pitch range to above the middle of the range. The single occurrence of a rising tone in UNJ is in a lexical nuclear word (296).

(296) msaFlri

The pattern in NWStz is quite similar. Here the nuclear accents are also realised by Fall and Rise tones. But, unlike UNJ, apart from simple falling tones and high rising tones, NWStz also contains instances of the use of the LR (low rising) variety of the rising tone.

In NWStz, the falling tone is found mostly on nuclear words that are lexical (297). In a similar way to UNJ, it less commonly occurs in nonlexical nuclear words (298).

(297) STRONGer, CLOAK, aGREED
sucCEED, CLOSEly, aROUND
atTEMPT, conFESS, TWO

(298) COULD

The rising tones occur in a total of just over 56% of all the nuclear accents in NWStz. Their occurrence is not restricted to lexical nuclear words. The HR (high rising) tone occurs in lexical ones such as (299) and nonlexical ones such as (300).

(299) SUN, BLEW, LAST

(300) OFF

In the passage the HR tone occurs once in a lexical nuclear word (301) and in

two nonlexical ones (302).

(301) LAST

(302) THEN, SO

The occurrence of F is quite frequent, compared with the occurrence of either HR or LR – the only other tones in the entire text. The proportion of the F to the combined occurrences of HR and LR is about 63% to 37%.

Observable in Table 5 is the absence of some of the tones that readily occurred in the conversational data in Chapter 3. For example, there is not one instance in which the Rise-fall tone was used in the reading texts. While the Simple Fall appears to be the most typical tone for realising nuclear accents in reading for both NWStz and UNJ, its Half-fall (HF) and Anticipated Fall (AF) varieties are not used at all in reading either of the texts. It can only be speculated here that this is due to HF and AF being commonly used for emotive, attitudinal or expressive purposes especially in interactive speech (but these were obviously not called for in the present narrative texts that the subjects read).

In UNJ as in NWStz, lesser pitch changes and movements also occur in the prenuclear segment of each of the intonation groups where the nuclear word is either not the only one in the group or is not in initial position. They are found in prenuclear words with minor prominence. Without going into any great detail, some examples of such words are listed below [(303), (304)]. They can be found in both lexical and nonlexical prenuclear words. For UNJ, examples of prenuclear words that are lexical are in (303), while those of nonlexical prenuclear words are in (304).

(303) 'kwanza msa'firi,

(304) 'nani, 'hata

NWStz contains a great many more examples of minor locations of prominence in the prenuclear segment of each of the intonation groups. As in UNJ, they can be on lexical as well as nonlexical words. Some examples of the former are (305) and of the latter are (306).

(305) 'north, 'wind, 'making, con'sidered,
'harder, 'traveller, gave, 'took, ob'liged

(306) 'which, 'when, 'be, 'then, 'who

So far we have discussed only the tones that are used for realising the nuclear accents. To give a fuller picture of the structure of the intonation group, we must also look, albeit briefly, at the tones in the postnuclear segments or tails of at least some of the intonation groups. We shall therefore now examine some of these beginning with those of UNJ.

In UNJ, tails – as was suggested in Chapter 4 – are of two kinds: (a) short, as a rule, one-syllable tails (T) that obligatorily occur at the end of nuclear words in final position, and (b) 'optional', longer tails (t), which imply the existence of one or more other words after the nuclear word.

The boundary tones of obligatory tails (T) and optional tails (t) are typically realized by different tone types. T is invariably realized by a low rising tail

tone. This is exemplified by (307) - (309).

(307) hata mwiSHO*we* ++
even finally

(308) haikupita MU*da* +
immediately

(309) na kwa HI*vyo* +
and therefore

This rising tail tone would usually be triggered by a comma punctuation. And, since the data in UNJ originates from the reading of a written text, this *comma tone* occurs in places where the readers either encountered overt commas, or where they intuitively expected commas or other short pause punctuation marks to occur. It is therefore no surprise that every occurrence of the rising tail tone precedes a +.

It seems safe enough to generalize that this comma tone is a low rise when the nuclear tone preceding it ends low. Another way of signalling the same effect seems to be for T to end high after a High Rising nuclear tone. Some examples of this are [(310), (311)].

(310) +++ MAra + akapita msaFI*ri* +
suddenly there- traveller
passed

(311) + atakayemVUa juba 'kwanza msaFI*ri* +

he-who-disrobes cloak first traveller

The minor prominence in the long, optional tail (t) may be realized by a variety of boundary tone types. The long tail may be manifested as a low falling tone, a low rising tone, a falling-rising tone or a low tone. Examples of these in the data are (312) - low fall, (313) and (314) - fall-rise, and (315) - low.

(312) + NDIye mwenye NGU*vu* +++

is-he who- possess strength

(313) +++ lakini KIla ukizidi kuVU*ma* +

but every-time it-increased to blow

(314) uPEpo + ulikuwa ukibi'shana na JU*a* ++

wind it-be arguing with sun

(315) u'pepo ukaKI*ri kuwa* +

wind it-confess that

The low falling tone occurs in long tails in sentence final position, where the reader encountered or expected to encounter a punctuation mark signalling a long pause. Typically it follows nuclear tones that end low. Taken together with the long pause that follows it, this low ending of the pitch pattern would generally signal completeness of the message communicated by the intonation group just ending or by the sequence of intonation groups of which the one in

question is the final one.

However, in (315), the circumstances are just the contrary: the word *kuwa* – "that" – signals an embedded clause and does not, therefore, in any way mark the end of a completed message. The low tail is thus here merely a variant of some sort of *that* intonation which occurs frequently in Swahili speech. Its other common variant is a low rise.

A fall-rise tone occurs in only one t-tail (313). Like its occurrence in the T-tail, it clearly corresponds with an intermediate pause in a sequence of intonation groups into which a long complex sentence is chunked. Similarly, the fall-rise tone which occurs in (312) seems to signal such an intermediate pause.

Tails do not feature significantly in NWStz. The reason is, of course, that most nuclear words are in final positions of intonation groups. Where they do occur, tails are quite short, consisting only of one or more postnuclear syllables of the nuclear word or, occasionally, also of short words like *that* or *him* – accented or unaccented.

There are 13 cases where the nuclear word is either monosyllabic or has final syllable stress and, consequently, permits no tails (316). There are four examples where the tail is made up of nothing but the last unstressed syllable of the nuclear word (317), and one in which the tail is the final two syllables (318). Finally, the tail is made up of a word after the nuclear word in only two cases in the entire data (319).

(316) SUN, aLONG, CLOAK, aGREED, OFF, COULD,
BLEW, LAST, atTEMPT, THEN, CLOAK, SO, TWO

(317) STRONGer, sucCEEDed, OTHer, CLOSEly, WARMly

(318) imMEDiately

(319) aROUND him, conFESS that

The tones used in the tails are of only two kinds: low rising tone and a low tone. The low tone is found on the tails which are the final syllable of the nuclear word, preceding a long pause. It therefore follows the falling nuclear tone in OTHer, CLOSEly and WARMly; but not in STRONGer or sucCEEDed, since they are followed by the short pause. All the remaining tails have a low rise tone, being a kind of a comma intonation, as they also are in UNJ.

4.6. Some Comparisons of English and Swahili

In this Section, we shall attempt to make comparisons between the findings for the readings of the three texts studied in the Chapter. We are interested, in particular, to juxtapose some of the salient similarities and differences between the Tanzanian and English native speaker readings of *The north wind and the sun.*

4.6.1. Distribution of different types of pause

As in NWStz, the breaks or pauses in NWSns have been classified into three types: + (short), ++ (medium) and +++ (long). The first two occur only sentence internally; the last only finally. The short pause tends to occur between the subject and predicate of complex sentences (320); between the main clause and the embedded clause, in (321) and (322),or between an initial adverbial and the rest of the sentence, (323) - (325).

(320) The north wind and the sun + were disputing ...

(321) They agreed + that the one who first succeeded ...

(322) But the harder he blew + the more closely did ...

(323) And at last + the north wind ...

(324) And immediately + the traveller ...

(325) And so + the north wind was obliged ...

There are six locations altogether where this type of pause occurs in the entire passage [(320) - (325)]. But of all these, only three - (320), (322), (323) - were produced by all the readers. The location in (321) occurs in four readings; that in (326) in two, while the one in (327) is used by only a single reader.

The medium pause - ++ - occurs less frequently than the short one. In the whole passage, it is used only three times by all the readers. Generally, it occurs after the short pause in complex sentences where all three types of pause occur in sequence. ++ tends to occur before a really long adverbial clause (326); between the subject and predicate of the embedded clause (327), or between the main clause and an embedded one beginning with a *that* comp (328).

An interesting contrast exists between NWSns and NWStz in the location of pause with respect to the *that* comp. Whereas the pause comes before *that* in all the native speaker readings, it is always located after *that* in the Tanzanian readings. This, in turn, is totally consistent with the way its Swahili equivalent is treated. In all the readings of UNJ, we get *walipaTAna kuwa +* and *upepo ukaKIri kuwa + - they aGREED that +* and *the 'sun was ob'liged to conFESS that +*, respectively.

(326) + were disputing which was the STRONGer ++ when ...

(327) ++ when a 'traveller came along 'wrapped in a 'warm CLOAK +++

(328) + the north wind was obLIGED to confess ++ that the sun ...

The occurrence of the long pause - +++ - is entirely predictable, occurring as it does between one sentence and the next, as well as at the end of the passage. It occurs eight times consistently with those locations, corresponding closely with the occurrence of full stops in the written text read by the subjects.

Table 6 juxtaposes for easy comparison the relationship of pause to punctuation marks between the three texts. At a glance, it becomes obvious that most of the short pauses occur where the text contains no overt punctuation marks in UNJ and NWStz. The semi-colon occurs once in all texts; this is reflected in the prosodic realization of the texts by a long pause in all three texts. The full stop predictably corresponds with the long pause in all three texts.

TABLE 6. Pause and punctuation in UNJ, NWStz and NWSns.

		PUNCTUATION				
		0	,	;	.	TOTAL
UNJ						
	+	7	0	0	0	7
	++	4	0	0	0	4
	+++	1	3	1	3	8
NWStz						
	+	8	0	0	0	8
	++	4	1	0	0	5
	+++	0	2	1	5	8
NWSns						
	*	1	0	0	0	1
	+	1	1	0	0	2
	++	2	1	0	0	3
	+++	0	2	1	5	8

In NWSns most of the long pauses occur only where there is an overt full stop; two where a comma was encountered, and one where the semi-colon was encountered. This is an exact replica of NWStz. But, in UNJ, the long pause occurs as many times with full stops as with commas, and only rarely when there is no overt punctuation mark and the semi-colon was encountered. While a short pause occurs as frequently as the long pause in both NWStz and UNJ, it is not so common in NWSns.

There is no doubt at all that an obvious contrast between the Tanzanian readings on the one hand and English native speaker readings on the other is

that, in one instance in the latter, the boundary between two intonation groups was marked by an internal structure criterion (represented by [*], further details below) rather than external criteria. Tanzanian readers do not appear to have depended upon internal structure criteria for demarcating between intonation groups either in English or in Swahili.

The result of segmentation is that there are only 13 intonation groups for the entire NWSns text, as compared with 21 in NWStz and 20 in UNJ. The intonation groups in NWSns are also generally longer than those in either of the other two texts.

The shortest group in NWSns has five words as opposed to only one word in UNJ or NWStz; the longest being 12 words (as compared with six in UNJ and 10 in NWStz). The average length of an intonation group in native speaker reading is approximately nine words per intonation group; while in Tanzanian readings it is six words in English and only five in Swahili.

4.6.2. Locations of nuclear accents

The locations of the nuclear accents in the two readings of the English text – NWStz and NWSns – differ considerably. The difference is attributable to the differences in the way the boundaries of the intonation groups are located in the two texts. These differences can be seen clearly in Table 7.

TABLE 7. Nuclear accent locations in NWStz and NWSns.

NWStz	NWSns
... and the SUN +	-
... the STRONGer ++	.. the STRONGer ++
... 'came aLONG +	-
... 'warm CLOAK +++	.. 'warm CLOAK +++
... aGREED that +	.. aGREED
... sucCEEDed +	.. succeeded *
... 'cloak OFF ++	.. CLOAK off ++
... than the OTHer +++	.. than the 'other +++
... as he COULD +++	.. as HARD as he 'could +++
... he BLEW +	.. HARDer he 'blew +
... CLOSEly +	-
... aROUND 'him +++	.. aROUND him +++
... at LAST +	-
... the atTEMPT +++	.. gave UP the at'tempt +++
... THEN +	-
... out WARMly +++	.. 'out WARMly +++
... imMEDiately +	-
... his CLOAK +++	.. took OFF his 'cloak +++
... and SO +	-
... to conFESS that +	.. was obLIGED to con'fess ++
... of the TWO +++	.. the 'stronger of the TWO +++

Table 7 makes it abundantly clear that the Tanzanian readers had shorter intonation groups thus producing a number of nuclear accents far greater than

that produced by the native readers (21 in NWStz and 14 in NWSns). It is also obvious that, for the Tanzanian readers, the general tendency is for the nuclear accent to be located at the end (or close to the end) of the intonation group.

This suggests a rather mechanical procedure in NWStz for assigning the nucleus in a given intonation group. It is rather difficult to account for this; it appears not be a straightforward instance of transfer from Swahili since it is not the case that the nuclear word is the rightmost in UNJ intonation groups. On the other hand, it rather resembles the Hallidayan account of unmarked tonicity. Since the Tanzanian undergraduates who read the NWStz text all took linguistics as one of their courses, it seems likely that the Hallidayan course had already exerted an influence on them.

For the native speakers of English, however, the nuclear word is in final position in only four instances (see Appendix XI): **the STRONGer, 'warm CLOAK, CLOSEly, WARMly**. In the remaining cases, it is either the last lexical item, eg **CLOAK off, aROUND him, as HARD as he 'could,** or it is much further away from the end, eg **STRONGer than the 'other, GAVE up the at'tempt, was obLIGED to con'fess.**[17] In the last case, the motivation for the selection of that particular nuclear location is obviously communicatively functional.

Such functions could include signalling the focal point of new information in the intonation group. Thus in, for instance, **GAVE up the at'tempt,** the final word - although lexical - does not attract the nuclear accent. The previous part of the text has just been describing precisely the attempts the 'north wind' has been making to 'uncloak' the traveller. Or it could merely be signalling that the focus is unspecified (cf *end-weight, end-focus* in Quirk et al 1972).

But a nuclear accent can also be almost at the very beginning of the intonation group. We shall take (329) as an example to illustrate this.

(329) +++ They aGREED that the 'one who 'first succeeded *

The nuclear accent is on the Predicate of the main clause. And there is full agreement among the other two texts in this respect - *+++ they aGREED 'that +* in NWStz and *+++ walipaTAna kuwa +* in UNJ.

Table 8 sums up the comparison of words with accentual prominence in the three texts. The parameters compared are: nuclear accents, minor prominence and the total number of accents.

TABLE 8. Accents in UNJ, NWStz and NWSns.

	Nuclear	Minor	Total
UNJ	20	24	44
NWStz	21	43	64
NWSns	13	33	46

It would appear from Table 8 that accents occur as frequently in the native speaker reading of the text as they do in the Tanzanian readings. This impression is due to the difference in the total number of intonation groups in the samples used for the two readings: 14 in NWSns, 20 in UNJ and 21 in NWStz.

The true picture emerges, however, when the occurrence of prominence (nuclear and minor) is viewed vis a vis the number of words in each intonation group and, consequently, the total number of words in the text (*The North Wind and the Sun*) from which both NWSns and NWStz are derived.

The text consists of 113 words. These are segmented into 21 intonation groups in NWStz, where there are four intonation groups each containing eight words; five intonation groups each of which contains five words, and three groups with three words each. There are three containing six words each; two each containing seven, and two others with two words each. The longest has only 10 words; the shortest only one word. One of the intonation groups contains only one word, and only one contains ten words.

TABLE 9. NWStz: number of words per intonation group.

									TOTAL
No. of words	10	8	7	6	5	3	2	1	113
No. of inton. groups	1	4	2	3	5	3	2	1	21

By comparison, the same 113 words are segmented into only 14 intonation groups in NWSns. Of these, only three consist of less than eight words each. Eight out of the 14 intonation groups are made up of between eight and ten words each. The remaining two have either 11 or 12 words each.

TABLE 10. NWSns: number of words per intonation group.

								TOTAL
No. of words	12	11	10	9	8	7	6	5	113
No. of inton. groups	1	1	3	2	3	1	1	1	13

Thus, it is obvious that NWStz contains many intonation groups that are

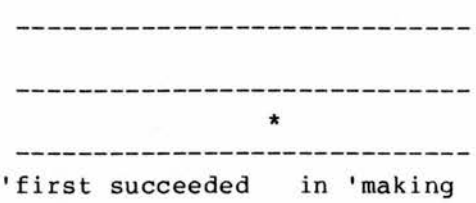
relatively shorter than NWSns does. If the cut-off point is put at six words, then NWStz contains 11 groups each containing five words or less (with a total of 29 nuclear and minor prominence locations). NWSns, by contrast, contains only one group with under six words (and this consists of five words).

Looking at it from the opposite end of the scale, there is only one intonation group with more than eight words (with 10 words). In NWSns, above nine words is the most typical value; with four intonation groups above that, and only six below.

The boundary between the third and fourth intonation groups in NWSns (Appendix XI) could not be determined by reliance on the external criterion of pause as in all the other groups. This is because there was no pause or hesitation anywhere in the stretch ***They agreed ... his cloak off.*** We therefore turned to *internal structure* criteria (see Cruttenden (1986:42). The stretch contained no less than seven accents: on *a'greed, 'one, 'first, 'making, 'take, 'cloak, 'off.* Two of these - **a'greed** and **'cloak** were realized by pitch movement. Furthermore, the complex syntactic structure of the stretch was taken into account. Consequently, it was decided to regard the stretch as consisting of two intonation groups with **agreed** and **cloak** as their respective nuclear words. What remained was how to determine the location of the boundary between the two groups.

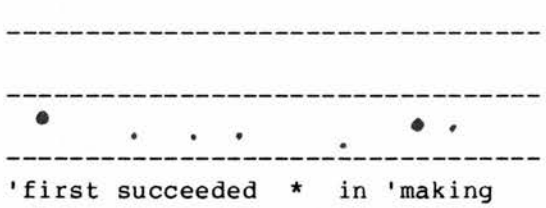
When the pitches of all the syllables were marked, it was noticed that there was no continuity between the pitch on the unaccented syllables *succeeded* and the syllables that follow them (Fig. 7). There was clear step-down to to the pitch of *in* from the preceding unaccented syllables, which was then followed by a higher pitch on the accented syllable *'mak-*, restoring the pitch height to about the same level to that prior to the downstep.

FIGURE 7. Boundary by internal structure criteria.



This, combined with the existence of two nuclear accents, was taken to be sufficient grounds for putting an intonation group boundary between *-ded* and *-in*. This boundary is signified by [*], in order to distinguish it from the rest, which are marked by pause (Fig. 8).

FIGURE 8.



The tones that are used to realize the nuclear accents in NWStz and NWSns do not differ substantially. There are only two types of pitch movement occurring at the nuclear accents in NWSns. Using the same characterization as in NWStz, we shall refer to these as F - where there is a simple fall - and R - where there is a simple rising tone. Of the 13 nuclear accents, only two had the rising nuclear tone. The bulk - almost 85% - had the falling nuclear tones. Table 11 juxtaposes the results for all three texts, UNJ, NWStz and NWSns, for easy comparison between them.

TABLE 11. Nuclear and Tail Tones in UNJ, NWStz and NWSns.

	UNJ	NWStz	NWSns
NUCLEAR TONE			
Fall	20	16	11
Rise	0	5	0
TAIL TONE			
Fall	7	0	5
Rise	5	5	1
Fall-Rise	2	0	0
Low	2	4	4

Whereas in NWStz tails were remarkably short because of the tendency to locate the nuclear word close to the righthand boundary-pause of the intonation groups, NWSns has much longer tails. Of course, like NWStz, NWSns also has tail-less groups and others with only one-word tails. But unlike NWStz, it has tails that are up to six words long (Table 12).

TABLE 12. Tails in NWStz and NWSns.

	NWStz	NWSns
TAILS		
0 tail	16	4
1 word tail	3	2
2 word tail	1	1
3 word tail	0	4
6 word tail	0	1

The tones used in the tail segment are also very similar between the three texts. The tail tone used in NWSns is the low falling tone. It will be recalled that this is also the most frequently occurring tail tone in both UNJ and NWStz.

If the foregoing results are compared with the Hallidayan system, differences far outweigh the similarities. The chief object of Halliday's system of tonality - the chunking of texts and utterances - is in our data achieved chiefly through pauses of different length (which correspond to whole syntactic units that form complete semantic constituents). The *pause defined units* (PDUs) of Brown et al (1980) would, therefore, appear to be relevant for this sort of data, viz. reading aloud. Tone group and our intonation group are roughly equivalent. However, the pause boundaries chunk the text and simultaneously leave one and only one nuclear accent per intonation group.

Halliday's tonicity - the distribution of nuclear accents or his tonics - is achieved differently in the readings by Tanzanians on the one hand and those of the English native speakers on the other. In NWStz, the nuclear accents appear to be shunted close to the end of the intonation group in a rather

mechanical fashion. But they are more flexibly distributed in different parts of the intonation group in the native speaker readings.

Finally, Halliday's Tone 1 and Tone 2 – fall from high to low, and rise to high, respectively, are the only nuclear tones found in our two main texts as well as in NWSns. His Tone 3, the low rise, also occurred in NWStz. Thus only unidirectional tones, that is movement upwards or downwards, appear to be relevant as nuclear tones in the data. Fall-rise and rise-fall tones only occurred on minor prominence locations in the tails.

The summary of the comparisons between the Tanzanian readings in English (NWStz) and those of the native speakers can be stated briefly as follows. The intonation groups are shorter in Tanzanian reading than in that of the native speakers, roughly by about three words on average. The locations of nuclear accents in NWStz is fairly static, being invariably located at the right of the intonation group. In NWSns, by contrast, the nuclear accent is quite flexible in its position within the intonation group.

The tones used to realise the nuclear accents of reading intonation groups constitute what may called a restricted tonal lexicon in both the Tanzanian reading of English and in native speaker reading. The tendency is to use an inventory of two tone types: the Fall and Rise. However, the pitch range of the glides upwards or downwards differs between the two groups of readers. For the Tanzanians, there is a much shorter glide than for the native speakers (cf Chapter 3).

CHAPTER 5

SUMMARY AND CONCLUSIONS

The foregoing chapters of this study, with the exception of Chapter 1, have been concerned with the respective roles of focus and prominence subordination in the placement of nuclear and constituent accents (and word stresses) in English and Swahili discourse. Nuclear tone types were also studied. Evidence was adduced from fresh data from Swahili conversational and non-conversational speech, and from reading in both English and Swahili. Some comparisons have been made between the findings for Swahili data in each chapter and the findings for English already published in some recent literature. The task of the present chapter is to attempt to integrate the whole study.

An utterance, as the speaker's deliberate act of communicating with his addressee(s) or hearer(s), was considered to be necessarily marked [+focus] either partly or wholly. The portion marked [+focus] is that containing information which the speaker wishes to be regarded as new or in some way important, and that it is his contribution at that point of the discourse in progress.

Some analysts were considered to have a macro and others a micro view of focus. Those in the former permit distinctions between broad and narrow focus; the minority, in the latter, see focus as a point (often assigning [+focus] to only the roots of lexical words) and are therefore restricted to narrow focus - what is focal being equivalent to the nuclear syllable. A macro view of focus was therefore adopted in this study in order to allow for not only broad and narrow focus; but also to permit focus to be on a continuum from full to minimal (including polarity) focus (330).

(330) **Full - Broad - Narrow - Minimal**

A focus domain, in which [+focus] and [-focus] are assigned to utterance portions is, for all practical purposes, coextensive with an intonation group.

Accentual prominence is used for signalling [+focus] in a given focus domain. Since a focus domain is equivalent to an intonation group, and each intonation group contains one and only one nuclear accent, it is generally the location of the nuclear accent which signals [+focus] in the focus domain. For Swahili, as for English, the general situation is for the nuclear word to be associated with the [+focus] information in the focus domain. But for Swahili things are complicated by the phenomenon of prominence subordination.

However, we can conclude that focus is generally as relevant to the nuclear accent location in Swahili conversational and other data as it is in English. There is indeed such a thing as a nuclear word in Swahili discourse. It is the focal point of information communicated by the focus domain, with the nuclear accent at its focal centre. The nuclear accent is prosodically realised by the relative pitch prominence of the nuclear tone. But English and Swahili differ in respect of their specific rules for placing the nuclear accent and, consequently, the relation between the location of the nuclear accent and distribution of [+focus].

In Swahili, the nuclear accent is the highest degree of pitch prominence in an utterance, found on the penultimate syllable of the nuclear word. The lower degrees are constituent accents and word stresses, respectively; the least prominent being the unaccented syllables (331).

(331) **Nuclear - Constituent - Word stress - unstressed**

If an utterance consists of two or more semantico-syntactic constituents, they will have a constituent accent each, apart from which there may also be one or more minor locations of prominence on any of the remaining words. The accents will be hierarchically ordered: the relative prominence of the unaccented syllables being subordinated to that of the word stresses; the relative prominence of which is subordinated to that of the constituent accent. One of the constituent accents becomes the nuclear accent, and the prominence of the other(s) becomes subordinated to it. This subordination is manifested in relative pitch prominence.

In this respect, Swahili contrasts significantly with English. As Gussenhoven (1983) has suggested, English assigns accents in every domain marked [+focus]; the rightmost accent being designated the nuclear accent. But, even in English accent domains appear to be formed by joining constituents together in such a way that the relative prominence of one or some of the joined constituents becomes weaker. Prominence in English is therefore in three degrees: nuclear accents, word stress, and unaccented syllables.

The nuclear accent is to be regarded as the most prominent point in the intonation group. However, nuclear accents in Swahili do not stand out as prominently in relation to the rest of the utterance as happens in English speech. This is evidently due to the presence of a large number of other prominence locations (constituent accents and word stresses) in the utterance with gradations of prominence between one level and another.

The structure of the intonation group in English, traditionally divided into four segments, shares similarities with the structure of the Swahili group (332) and (333).

(332) (P) (H) **N** (T)

(333) (p) (P) **N** **T** (t)

The structure, in both English and Swahili groups, is characterised by obligatory nuclear word: although only the nuclear syllable is obligatory in English. But, in Swahili - due to the phonological structure of the Swahili word, with stress (potential accent location) generally on the penultimate syllable, it is a bisyllabic nuclear word that is obligatory - monosyllabic nuclear words being rare exceptions to the rule. An obligatory monosyllabic tail T is therefore part of the structure. But the nuclear word may be polysyllabic, with one or a number of syllables (P) before the nuclear syllable (334).

P **N** **T**

(334) watakapokubali-A-na.

when-they-reach-mutual-agreement

The nuclear word may also be preceded by one or more prenuclear words (p); it may be followed by one or more postnuclear words (t).

Although the structure in Swahili intonation groups has no direct equivalent to what is referred to as Head in the English intonation, there is a tendency for the pitch of minor prenuclear prominence locations to be stepped-up to the nuclear tone. The Swahili optional tail (t) is typically characterised by downstep.

The nuclear accent itself is realized by the nuclear tone. In the interactive conversational data, Swahili was shown to distinguish three nuclear tone types:

the Fall, Rise and Rise-Fall. The Fall may be realized in one of three possible ways. It may be a Simple Fall from H to L. It may be a Half-Fall from H to M or slightly below M. The Simple Fall and Half-Fall both begin on the nuclear syllable. But the third kind of Fall, the Anticipated Fall, begins one syllable or two before the nuclear one.

The Rise-Fall may be realized as a simple RF with the R beginning on the nuclear syllable, followed by the F on the obligatory tail syllable. Alternatively, the rise may begin, as in the AF variety of the Fall, two syllables before the nuclear syllable, followed by another syllable. The fall then occurs on the nuclear syllable, followed by the obligatory tail. In those circumstances, there is a Rise-plus-Fall.

The above tonal lexicon of Swahili differs from that proposed by Maw and Kelly (1975), which consists of six tonic types. It also differs from nuclear tone inventories of English proposed by different analysts in several ways. For example, compared with Halliday's seven primary tones of RP, only the Swahili Fall, Rise and Rise-Fall are approximately similar to Halliday's Tone 1, Tone 2 and Tone 5, respectively. When compared with the nuclear tones that Gussenhoven (1984) proposes for English, only the Fall and the Rise feature in both languages.

Significantly, there is no authentic Swahili tone to match the English Fall-Rise (Halliday's Tone 4 or Gussenhoven's **V-Selection** tone). Another difference between the nuclear tones of English and Swahili is the short pitch span of Swahili tones. Swahili pitch movements have short excursions: rises and falls being quite abrupt and steep. Transferred to the realization of the nuclear tones of English, the effect on the hearer will be one of abruptness, curtness, impoliteness; all unintended by the speaker.

Tanzanians and many other people in East Africa learn lingua francas like

English in the classroom, reading and writing playing an important role. It is for that reason that this study devotes Chapter 4 to the study of reading intonation in both English and Swahili.

The segmentation of the reading text into intonation groups is closely associated with pauses in the Tanzanian readings of English and Swahili analysed. The occurrence of pauses of different lengths in turn relates closely to punctuation marks in the text. Full stops and semi-colons appear to be associated with long pauses at the end of an intonation group. Compared with the English native speaker readings of the same English text read by the Tanzanian readers, the former produced much longer intonation groups, with fewer pauses and showing a smaller degree of reliance on punctuation marks as signals for intonation group boundaries. However, for both the Tanzanian and English native speaker readings, the intonation groups were generally equivalent to semantico-syntactic constituents of varying lengths.

Tanzanian readers of English, in comparison to native speaker readers, tend to have a far greater number of nuclear and minor prominence per intonation group. That implies more intonation groups and, since their segmentation strategy is related to pauses at intonation group boundaries, the effect created is one of halting, staccato speech, lacking fluency. There is also a tendency for the nuclear accent to be located invariably on the rightmost nuclear word, especially in reading intonation.

A significant similarity between the English readings of Tanzanians and native speakers was that the readers tended to deploy a limited number of nuclear tones. Only the Fall and the Rise nuclear tones were used in realizing the nuclear accents. The nature of the reading text - a simple narrative text in this case - probably plays a role in determining how many nuclear tone types readers use. Had the text been, for instance, an extract from a scene in a novel where there is both narrative and dialogue, the same readers might have

deployed more nuclear tone types.

This study has therefore shown that (a) the placement of nuclear and other accents in Swahili – as in English – is better accounted for by rules rather than haphazard direct semantic highlighting alone, and (b) there exist certain areas where English and Swahili share similarities and differences at the prosodic level: their respective language specific rules being an example. (But it is, of course, not realistic to attempt to reduce all aspects of human language to sets of rules. There probably will always remain areas which can be accounted for only probabilistically with reference to such things as situational or extralinguistic context.) By isolating such similarities and differences, it is hoped that a small contribution has been made towards the development of an English intonation course tailor-made to meet the specific needs of Tanzanian and other learners of English in like circumstances. It is hoped that such a course would positively exploit the areas of similarity between English and their languages of wider use (such as Swahili, which is already the national language in Tanzania and Kenya, and widely used and learned in various other countries in Eastern and Central Africa).

Such broad areas of similarity identified in this study include *focus, nucleus* and *prominence subordination.* The study has demonstrated how in Swahili, like English, the speaker assigns [+focus] to the whole of his utterance, or to a portion of it while the rest is [–focus]. Each focus domain, usually coextensive with one intonation group, contains a nucleus or nuclear core, consisting of a nuclear constituent with the nuclear word as its focal point; the nuclear accent – realized prosodically by the nuclear tone, is the focal centre of the nuclear word.

The actual specifications of each of those aspects within the utterance is, of course, language specific. These will constitute the areas of difference between the languages; it will be up to the course developers to take these

into account. Specific recommendations would include the following. The course will need to ensure that it will enable learners to locate nuclear accents more flexibly within the intonation groups, rather than merely fixing them on the rightmost lexical item. To enable learners to make their communication through spoken English fluent and more effective, intonation group lengths should be variable, with fewer accents per groups. Within the intonation group, the pitch spans of the nuclear tones should vary according to context; they should not have short movement as they invariably do in Swahili.

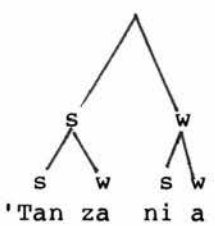
Finally, it is hoped that the comparative aspect of the study also makes a contribution towards a better understanding of world languages, another small step towards identification of those things that are *universal* to human speech and language.

NOTES

1 This includes such notions as *isochrony* or 'stress timing', which some linguists suppose characterises the rhythm of English speech.

2 But, of course, any one of the seven English words is accentable and may become the nuclear word,
given an appropriate context. **when, going, MARS, together** are lexical and, therefore, first candidates for nuclear accent locations. ***Are, we, to,*** although non-lexical, could also be the locations in appropriate MINIMAL or POLARITY focus (see Chapter 2).

3 The anglicized pronunciation of the name Tanzania would be represented as shown below, giving s-w-s-w.



This is, of course, because such pronunciation introduces a secondary stress on the initial syllable. But, in its native pronunciation, the primary and only stress falls on the penultimate syllable, which is as predicted by the Swahili lexical stress rule, giving w-w-s-w.

4 In Halliday's analysis and representation, the tone group consists of one or more feet. A foot is

taken to be a unit of English speech rhythm by many analysts.

5 The authors' main concern here was, of course, with the Edinburgh accent of Scottish English (ESE). They nevertheless also make frequent references to and comparisons with other accents both in Scotland and the Britain, especially RP. The question that one might raise here is: Is it really in keeping with the facts to suggest that, although they are speakers of one and the same language (albeit with different accents), RP speakers speak in *tone groups* while ESE speakers and those of other Scottish accents can only manage to speak in PDUs?

6 Gussenhoven (1984:15), for example, maintains a very different position, which he states explicitly as below.

> we do not define focus on the basis of the position of the nucleus. Indeed, for all we know, a given [-focus]-[+focus] structure may well require the nucleus to fall ***outside*** the material marked [+focus].

7 For Chafe, focus and nucleus coincide on the word that contains new information, specifically, on the root. However, it is noticeable that, among his examples, there are none where new information is contained in a stretch longer than the single word.

8 And, perhaps, also to those among his hearers who happen to possess psychic or special psychological insight.

9 In educated or 'literate' Swahili, such division into accent domains tends to be closely associated with the occurrence commas, semi-colons or colons in written texts (further discussion and illustration of this in Chapter 4).

10 Chafe's vew is that, for the purpose of representing old and new iformation, 'all languages' probably use 'word order' and other surface structure devices. He cites the example of Japanese, which uses the particles *wa* and *ga,* respectively, to represent old and new information.

11 Their use of salient and presalient is clearly derived from the traditional British analysis of the prenuclear portion of the intonation group into Head and Prehead.

12 An obvious exception here would be the handful of accentable monosyllabic words (eg *JE, LO, SI, TU).* But, since not all of them are permissible in utterance final position, glossing them over would cause no vital flaws in the analysis.

13 That no two readers would normally read aloud a given a stretch of text with identical phonetic features is not a moot issue.

14 The punctuation of UNJ – as found in the IPA booklet – contains an instance of a long, unpunctuated sentence. The following where there are only two punctuation marks according to the IPA transcription, will help illustrate the point:

jua likaanza kung'ara kwa ukali,
the sun shone out warmly

haikupita muda mara msafiri alivua juba lake
immediately the traveller took off his cloak

na kwa hivyo upepo ukakiri kuwa
and so the north wind was obliged to confess that

jua lina nguvu kuliko yeye.
the sun was the stronger of the two

15 Liberman and Prince (1977) use R (root); but in this Chapter we shal use D instead. This signifies the nuclear accent domain; s and w are for strong and

weak, respectively.

16 See Note 12.

17 Although the majority of the sample located the nuclear accent on GAVE, a good 15% produced ***gave UP***. A similar variation also occurred in another intonation group, where 65% produced ***TOOK off*** while the remainder of the sample had ***took OFF*** instead. In the penultimate intonation group, a nuclear accent variation also occurred: most of the sample had ***obLIGED to confess***; the minority had ***obliged to conFESS***. In the latter case, there was generally a rising tone from a down-stepped position.

APPENDICES

Appendix I

(1) A shamba lina mazao gani?

farm it-has crops what
"what crops are in the plot?"

B [kuna mazao *mbaliMBAli.*]

there-is crops various
"there are various crops."

(2) A kama nini?

"like what?"

B [*upande wa* JU*u*] [kuna MBO*go na viazi* *suKAri.*]

side of top there-be veg. and potatoes sweet
"on the top side there are vegetables and sweet potatoes."

(3) A yaani limegawanyika sehemu nyingi?

it-is- that it-be-divided-into parts many
"does that mean it's divided into many parts?"

B [*Slo*] [sehemu nyingi SA*na.*]

not parts many very
"not very many parts."

(4) A na sehemu nyinginezo je?

and parts others what
"and the other parts, what about them?"

B [upande *wa* CHI*ni*] [nimepanda MIti ya maTUnda.]

side of down I-ve-plant trees of fruits
"on the lower side I've planted fruit trees."

(5) A matunda aina gani?

fruits kind what
"what kind of fruits?"

B [nimepanda *aina TAtu*] [NDI*zi, mapapai na maCHUngwa.*]

I-ve-plant kinds three banana, pawpaws and oranges
"I've planted three kinds: bananas, pawpaws and oranges."

(6) A sikujua lina mazao mengi vile.

I-din't- it-has crops many that
"I didn't know it had so many crops."

B [HA*ta*] [*SI* mengi SA*na.*]

never not many very
"no, not very many."

(7) A kuna nini zaidi?

there's what more
"What else is there?"

B [sehemu kama *ya kaTIkati*] [*ni TUpu kabisa.*]

parts like of centre is empty completely
"parts like the central area are completely empty."

(8) A shamba lina eneo gani?

farm it-has area what
"what's the area of the plot?"

B [eneo LAke] [ni *eka MBIli.*]

Appendix II

(1) A nini hasa tatizo lenu kubwa?

what exactly problem your big
"what exactly is your main problem?"

B [tatizo kubwa *zaldi*] [*ni ukosefu wa* UME*me.*]

problem big more is lack of electricity
"the main problem is the lack of elctricity."

(2) A ukosefu huo unatokana na nini?

lack that is-caused by what
"what's the cause of that lack?"

B [ukosefu we NYEwe] [*unaa* NZI*a* *kwenye kiTUo.*]

lack itself it-originates inside station
"it originates in the (power) station."

(3) A tatizo hilo limekuwapo kwa muda gani?

problem that it-'s- for time what
been-
present
"how long have you faced that problem?"

B [ni *mwaka mZIma sasa.*]

is year whole now
"it's now a WHOLE year."

(4) A mmejaribu kulitatua namna gani?

you-ve- to-it- means what
try solve
"how have you tried solving?"

B [tumejaRIbu] [*mambo maWIli.*]

we-'ve-try things two
"we've tried two things."

(5) A naam, unaweza kutueleza ni mambo yapi?

yes you-can to-us-tell is things which
"could you tell us what they are?"

B [*KWAnza*] [*tulizungumza na ki* TU *o.*]

first we-spoke with station
"first we held discussions with the station."

(6) A mlifikia wapi?

you-reach where
"what was the result?"

B [*hawaWEzi kutupa* uMEme] [*wa ku* TO *sha.*]

they-can't to-us- power of enough
give
"they can't supply us with sufficient power."

(7) A sasa mtafanya nini?

now you-'ll-do what
"what will you do now?"

B [*tumeaMUa*] [*kununua jene* RE *ta.*]

we-'ve-decide to-buy generator
"we've decided to buy a generator."

Appendix III

(1) A mambo yalikuwaje?

things they-were-how
"how did things go?"

B [*JUma*] [*ali'shinda mbio zake* ZO *te.*]

he-won race his all
"Juma won all his races."

(2) A juma alifanya vizuri?

he-did good
"did Juma do well?"

B [JUma] [*aliSHInda mbio zake* ZO *te.*]

he-won race his all
"Juma won all his races."

(3) A juma alishinda?

he-won
"did Juma win?"

B [JUma] [ali'shinda *mbio zake ZOte.*]

(4) A juma alishinda mbio gani?

he-won race what
"which race did Juma win?"

B [JUma] [ali'shinda mbio *zake ZOte.*]

(5) A juma alishinda mbio zake?

he-won race his
"did Juma win his races?"

B [JUma] [ali'shinda mbio zake *ZOte.*]

(6) A juma alishinda mbio zake zote?

B [*NDIyo*] [JUma] [ali'shinda mbio zake ZOte.]]

yes

"yes, Juma won all his races."

Appendix IV

(1) A ulisema nini?

you-said what
"what did you say?"

B [*baba YAngu*] [*ali*'mwita polisi wa ZAmu.]

father my he-called police on duty
"my father called the duty policeman."

Bl *baba yangu mDOgo ali'mwita polisi wa zamu.*

small
"my junior uncle called the duty policeman."

(2) A ulisema dada?

you-said sister?

"did you say 'sister'?"

B [*BAba* yangu] [alimwita po'lisi wa ZAmu.]

Bl *BAba* yangu mdogo alimwita polisi wa zamu.

(3) A sikujua baba yako ni mwuaji!

I-didn't- father your is killer
know
"I didn't know your father was a murderer."

B [BAba yangu] [ali*MWIta* polisi wa ZAmu.]

(4) A ulisema nani?

you-said who
"who did you say?"

B [*baba YAngu.*]

B1 [*baba yangu mDOgo.*]

(5) A alimwita nani?

he-called who
"who did he call?"

B baba yangu alimwita *polisi wa ZAmu.*

B1 baba yangu mdogo alimwita *polisi wa ZAmu.*

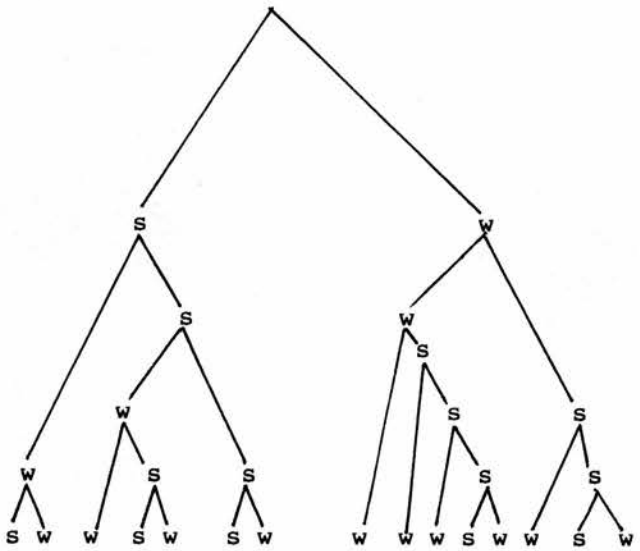
B2 *polisi wa ZAmu*

Appendix V

Matangazo ya Kifo

Transcribed below is the text of a Death Announcement broadcast on Radio Tanzania Dar es Salaam. Only the actual names of individuals and their addresses have been altered. It represents the standard text of every such announcement. Usually several announcements are made before or after most of the Swahili news bulletins during the day.

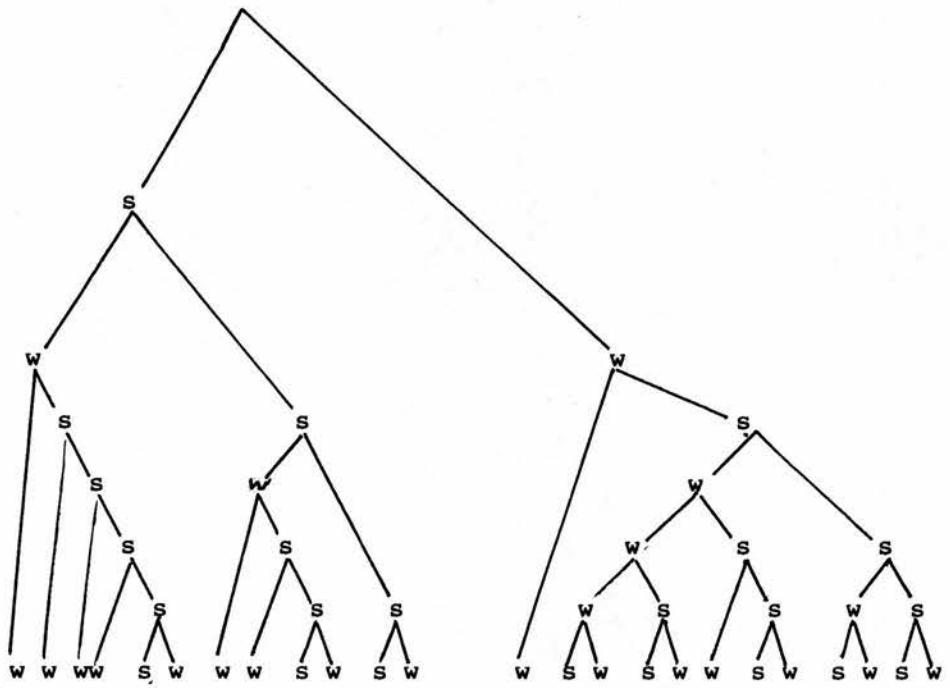
In the representations in 1 – 8, it is assumed that every constituent is [+focus], hence the *italics*. The nuclear syllable is indicated by big CAPitals while small CAPitals indicate constituent accents. Word stresses actually manifested are shown by ' before the penultimate syllable of the relevant word. Accent domains are indicated by [ ].



1 [*ndugu sa'lama MBOgo*] [*wa sanawari a* RU*sha*]

brother of

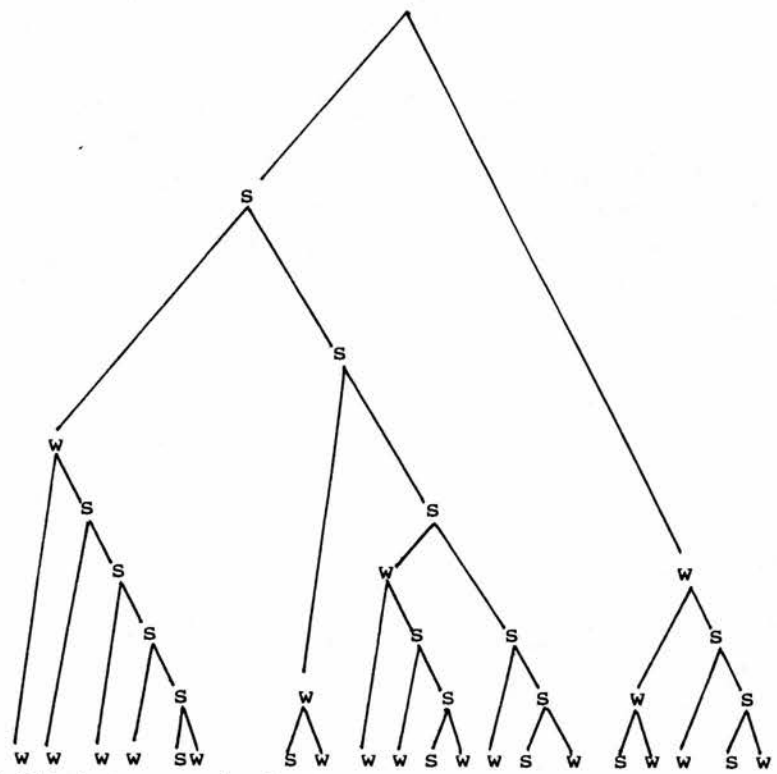
"comrade Salama Mbogo of Sanawari, Arusha"



2 [anasiki TIka kutangaza KIfo] [cha mama yake m DOgo tesa Ali]

is-sad to-announce death of mother hers small

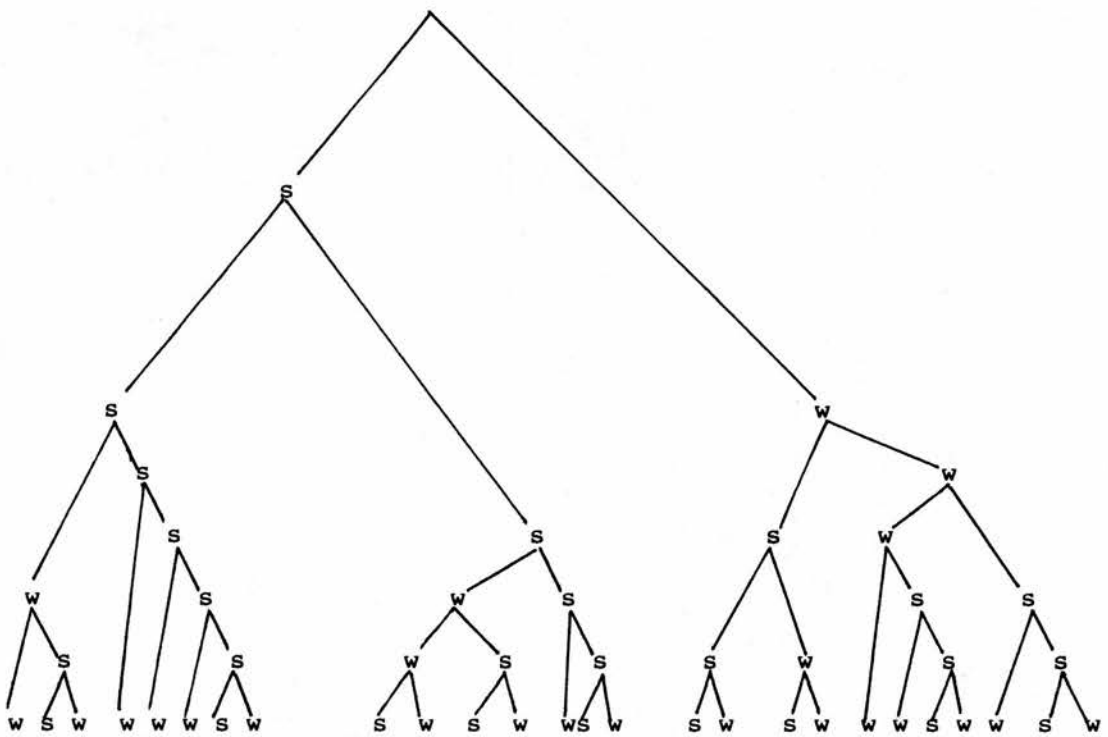
"regrets to announce the death of her younger aunt, Tesa Ali,"



3 [kilichoto KEa] [HUko sanawari aRUsha jana u SIku]

which-occurred there yesterday night

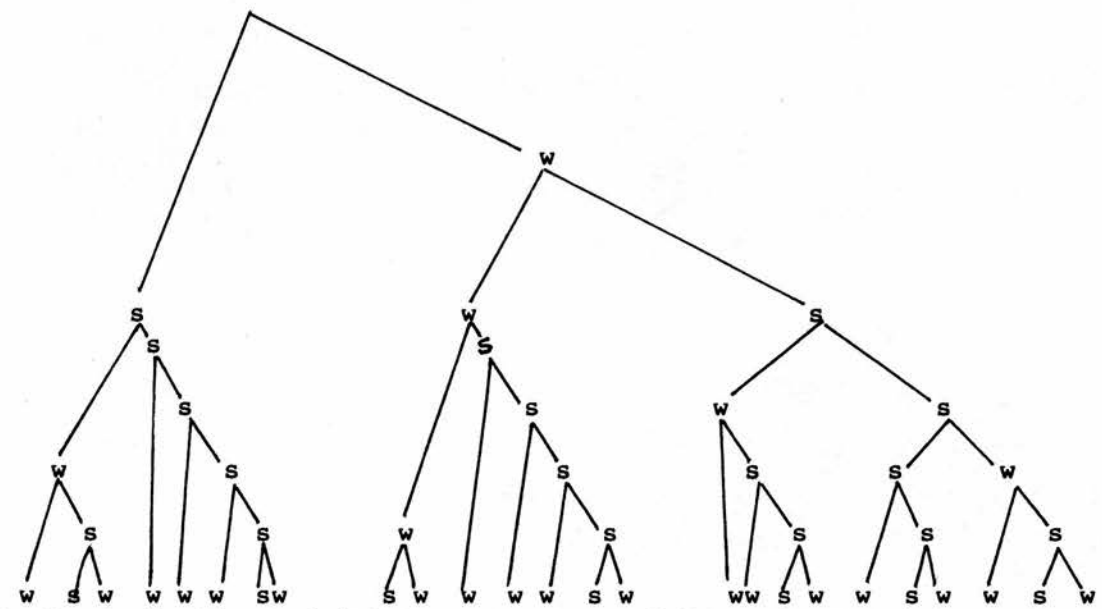
"which occurred last night;"



4 [maZIshi yatafaNYIka] [kesho kutwa jiOni] [HUko 'huko sanawari a RUsha]

burial it'll-take- place day-after- tomorrow evening there there

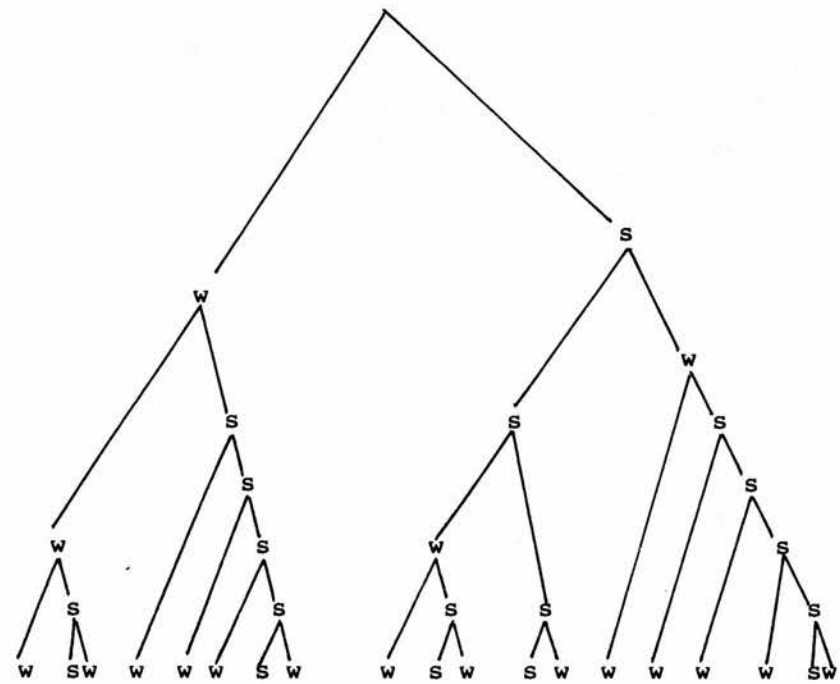
"the burial will take place in the evening day-after-tomorrow at Sanawari Arusha;



5 [ha'bari ziwafi KIe] ['dada wa mare HEmu] [chausiku ha'misi wa TAnga]

news it-to-reach sister of deceased of

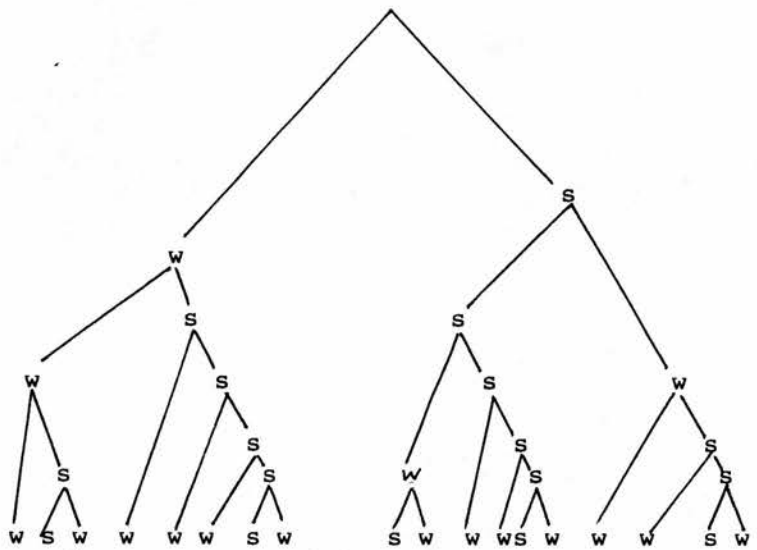
"she wishes to inform: the deceased's sister Chausiku Hamisi of Tanga;"



6 [mju'kuu wa mare HEmu] [sa'fari MBOgo wa dar es sa LAam]

grandson of decesead of

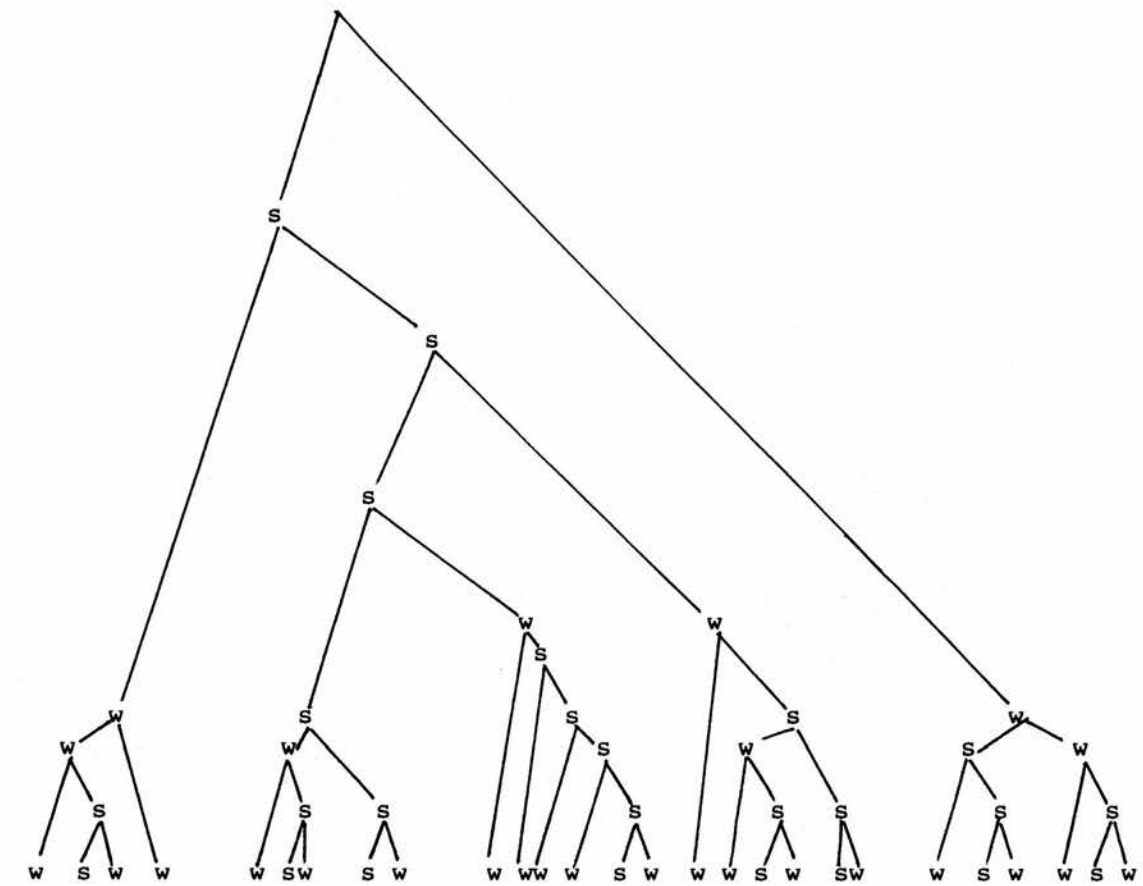
"the grandson of the deceased, Safari Mbogo of Dar es Salaam;"



7 [shemeji wa mare HEmu] ['pita sokoIne wa mo NDUli]

brother- of deceased Peter of
in-law

"brother-in-law of the deceased, Peter Sokoine of Monduli;"



8 [pa MOja na] [jamaa WOte] [wanaohu'sika na msiba HUo] po POte walipo]

together with rel- tive all who-are- concerned with bere- avement this anywhere they-are

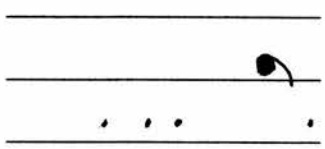
"and all relatives that this bereavement may concern wherever they may be."

Appendix VI

Nuclear Tones in Swahili

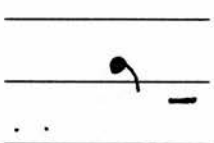
1 The Fall nuclear tone

a Simple Fall

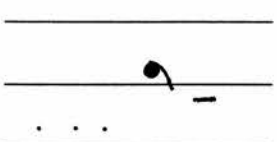


[eneo LAke] [ni *eka M B I I i.*]

b Half Fall



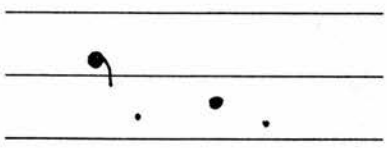
[*baba Y A n g u.*]



[*wazazi* WA *ke* [*wamefaR I k i.*]

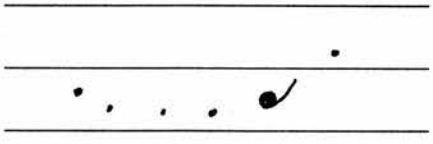
"his/her parents are DEAD."

c Anticipated Fall



[kuna mazao *m b a l i M B A l i.*]

2 Rise nuclear tone

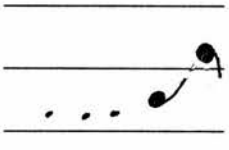


[*h a i w e z e K A n i.*]

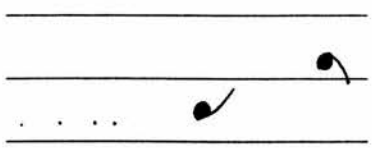
[*akasema N I n i* ?]

3 The Compound Nuclear Tone

a Rise Fall nuclear tone

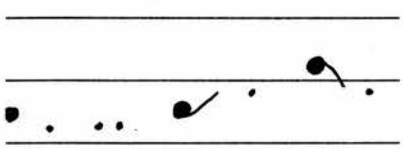


[MAmbo] [yalikuW A j e?]



[SHAmba] [lina mazao G A n i ?]

b The Rise-plus-Fall

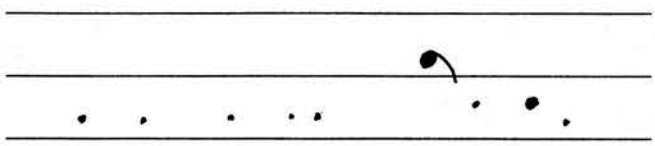


[JUma] [ali'shinda mbio z a k e *Z O t e* .]

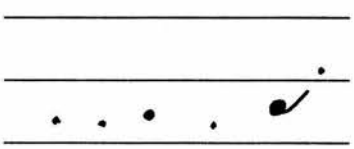
Appendix VII

Prenuclear patterns in the contour

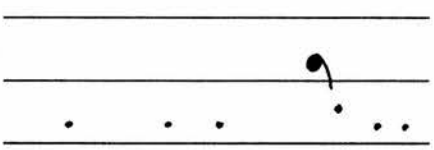
I Unaccented prenuclear syllables



[k u n a *m a z a o m b a l i MBA li.*]

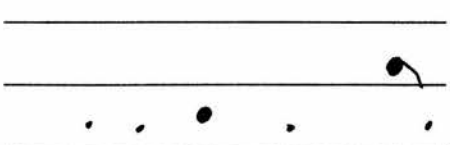


[*a k a s e m a Nlni* ?]

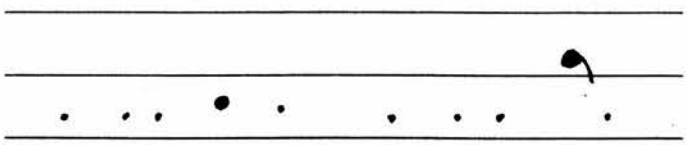


[*n i m w a k a m Zlma sasa.*]

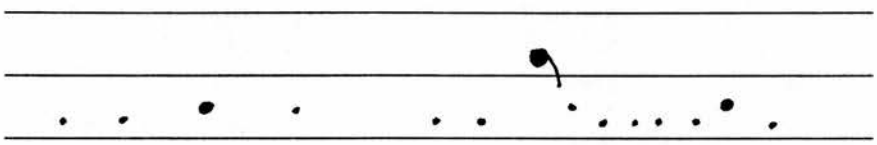
II Minor Prenuclear Prominence



[*b a b a y a n g u m DOgo.*]



[e n e o LA k e] [n i *e k a MBIli.*]

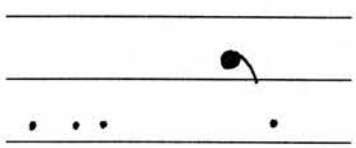


[b a b a YA n g u] [*a l i MWIta polisi wa* ZA *mu.*]

Postnuclear patterns 1

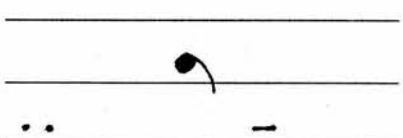
Obligatory tail

Low obligatory tail



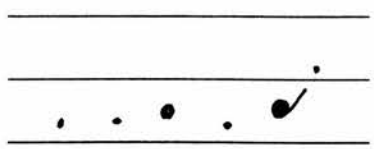
[eneo LAke] [ni *eka M B I I i.*]

Low long obligatory tail



[kuna mazao *mbali M B A I i.*]

High obligatory tail



[*a k a s e m a Nlni* ?]

Drop obligatory tail

[*ilikuW A j e* ?]

context:

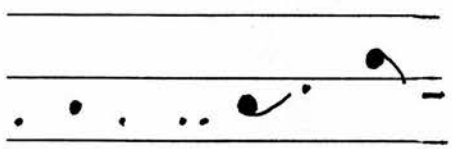
A nisingekuwa karibu, joni asingekuwa hai leo.

"if I hadn't been nearby, John wouldn't be alive today."

B [*ilikuWAje* ?]

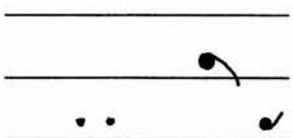
"what happened?"

Mid obligatory tail



[JUma] [ali'shinda mbio zake *Z O t e.*]

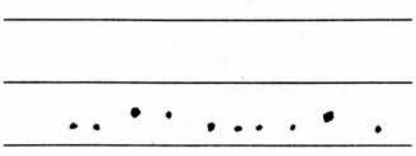
Rising obligatory tail



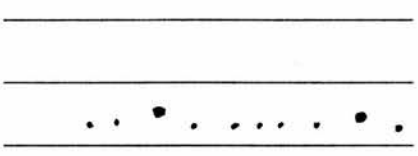
[*mara N Y I n g i.*]

Postnuclear patterns 2

Longer Tails



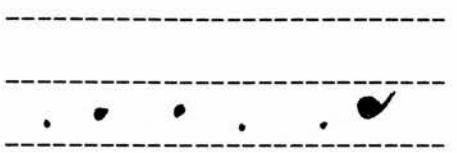
[*baba yangu mDOgo*] [*ali* MWI *ta polisi wa* ZA *mu.*]



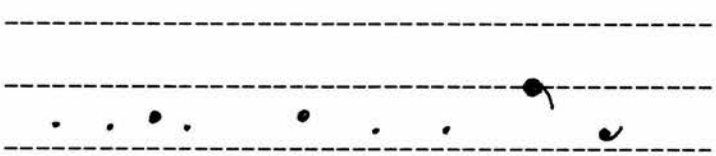
[*baba YAngu*] [*ali* MWI *ta polisi wa* ZA *mu.*]

Appendix VIII

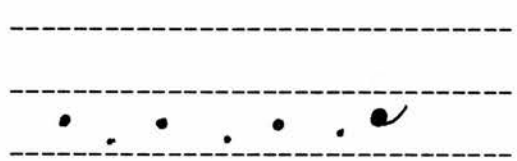
THE NORTH WIND AND THE SUN (**NWStz**)



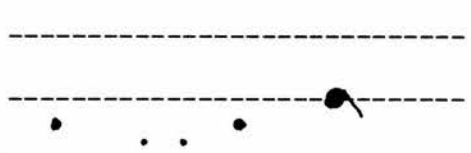
the 'north 'wind and the SUN +



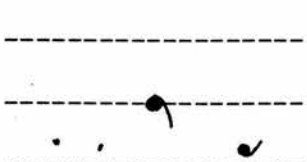
were dis'puting + 'which was the STRONGer ++



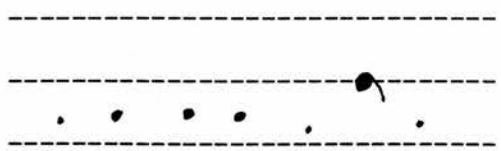
'when a 'traveller 'came aLONG +



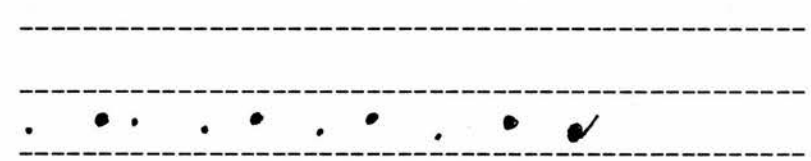
'wrapped in a 'warm CLOAK +++



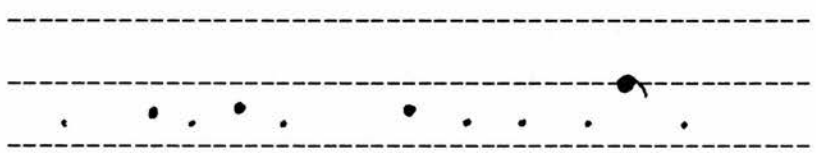
they aGREED 'that +



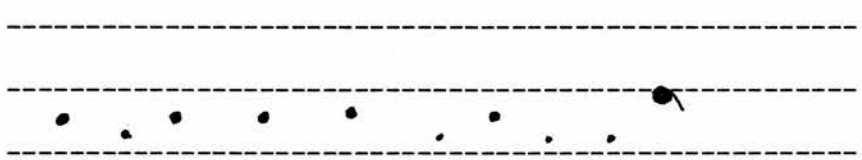
the 'one 'who 'first sucCEEDed +



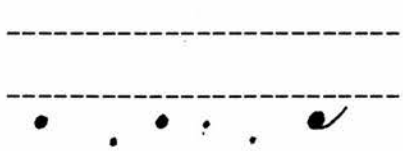
in 'making the 'traveller 'take his 'cloak OFF ++



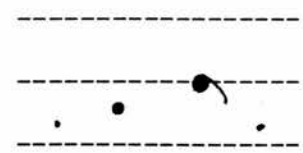
should 'be con'sidered + 'stronger than the OTHer +++



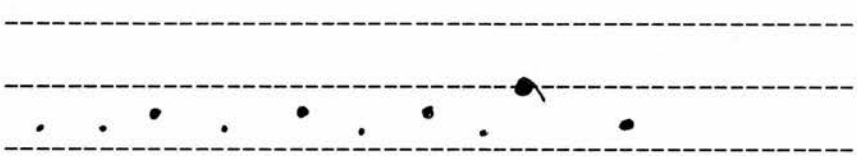
'then the 'north 'wind 'blew + as 'hard as he COULD +++



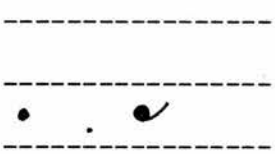
but the 'harder he BLEW +



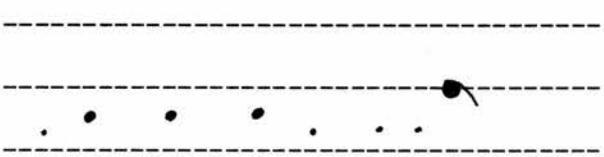
the 'more CLOSEly +



did the 'traveller + 'fold his 'cloak aROUND 'him +++

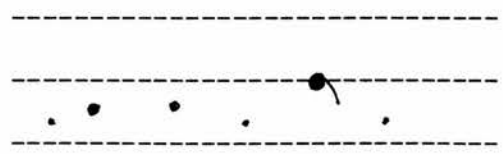


and at LAST ++



the 'north 'wind 'gave up the atTEMPT +++

THEN +

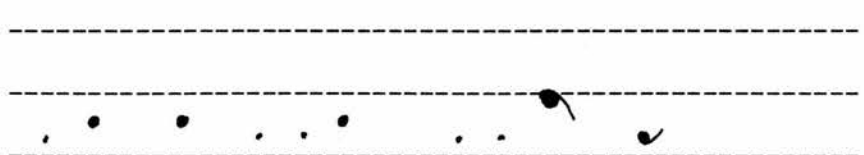


the 'sun 'shone out WARMly +++

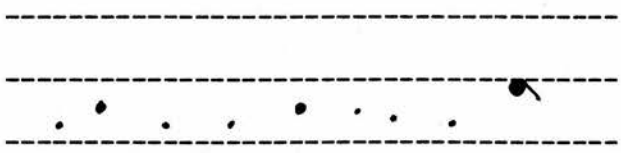
and imMEDiately +

the 'traveller + 'took off his CLOAK +++

and SO ++



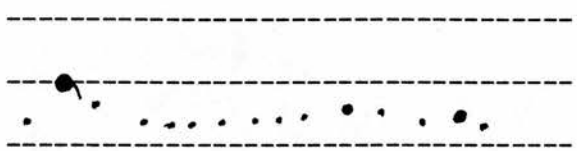
the 'north 'wind was ob'liged + to conFESS 'that ++



the 'sun was the 'stronger of the TWO +++

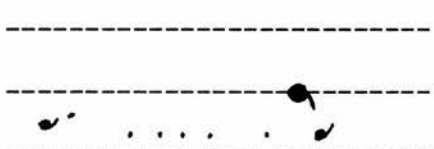
Appendix IX

UPEPO NA JUA (**UNJ**)

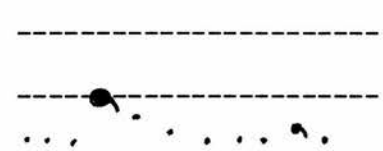


uPEpo + ulikuwa ukibi'shana na JUa ++

kuwa NAni mwenye NGUvu kupita mweNZIwe +++

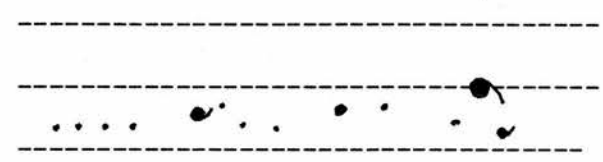


MAra + akapita msaFIri +

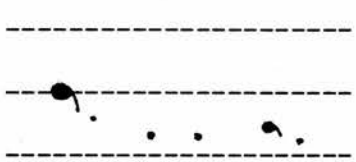


aliyeKUwa amevaa JUba +++

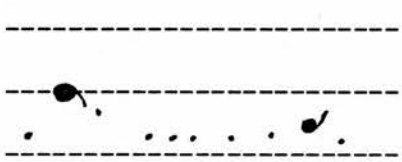
walipaTAna kuwa +



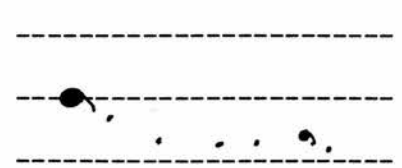
atakayemvUa juba 'kwanza msaFIri ++



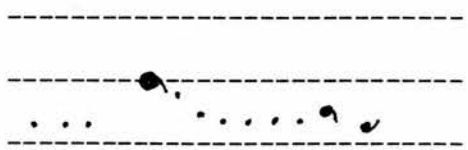
NDIye mwenye NGUvu +++



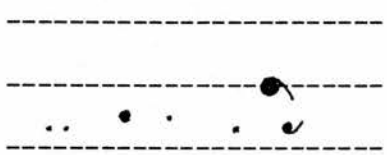
uPEpo + ukaanza kuvUma +



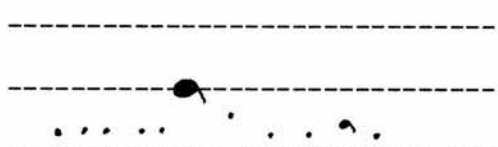
MWIsho wa nguvu zAke +++



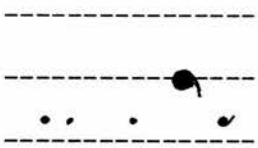
lakini + KIla ukizidi kuvUma ++



ndio 'kwanza msaFIri +



huzidi kuliBAnza juba LAke +++

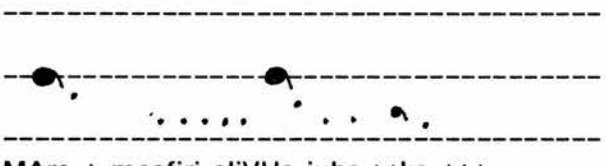


hata mwiSHOwe ++

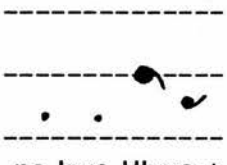
u'pepo ukaKAta taMAa +++

'jua likaanza kuNG'Ara +kwa uKAli ++ +

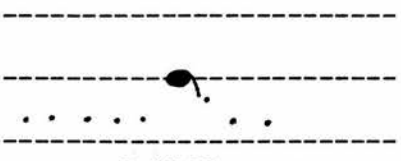
haikupita MUda +



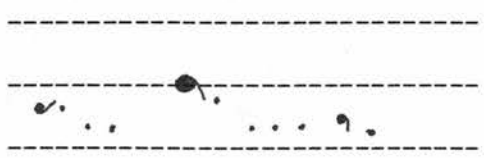
MAra + msafiri aliVUa juba LAke +++



na kwa Hlvyo +



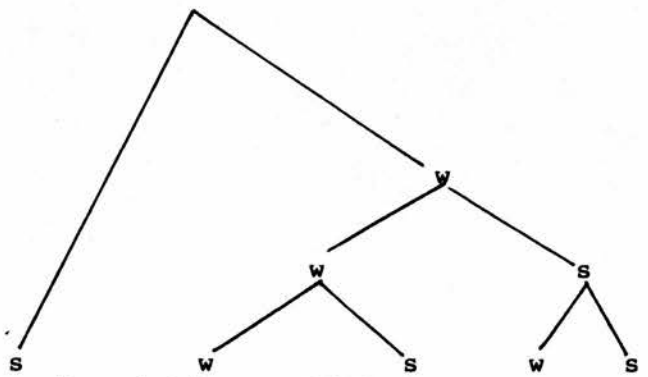
upepo ukaKlri kuwa +



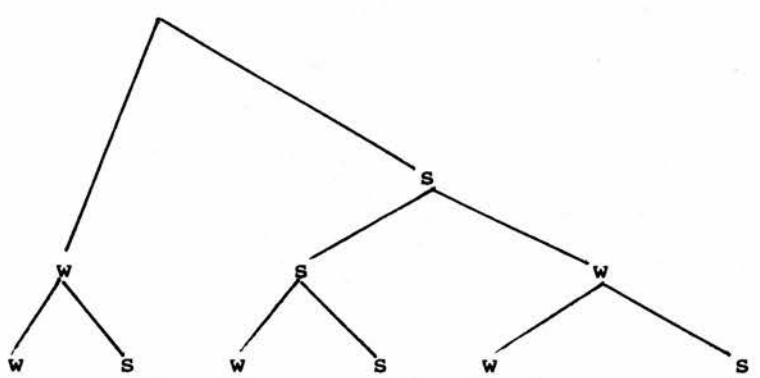
JUa lina NGUvu kuliko YEye +++

Appendix X

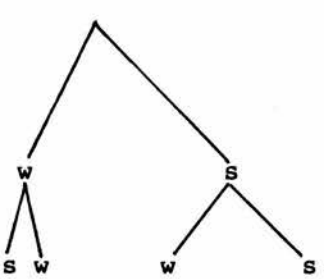
Accent Subordination in UNJ



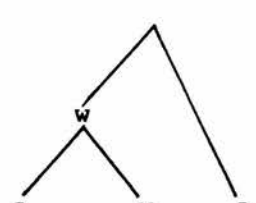
1 [uPEpo] [ulikuwa ukibi'shana na JUa] ++



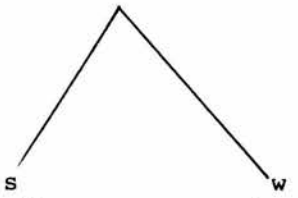
2 [kuwa NAni mwenye NGUvu] [kupita mweNZIwe] +++



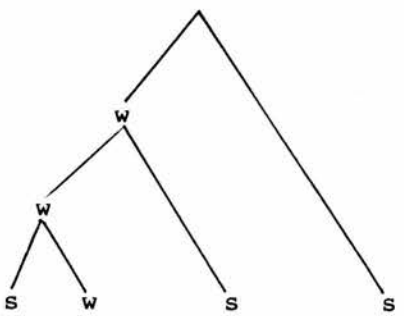
3 [MAra akapita msaFIri] +



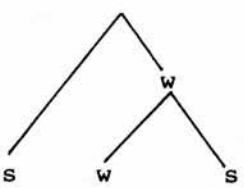
4 [aliyeKUwa amevaa JUba] +++



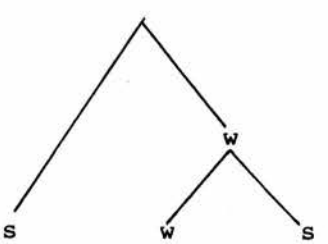
5 [walipaTAna kuwa] +



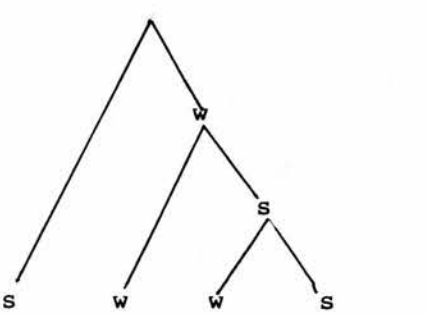
6 [atakayemVUa juba] [KWAnza msaFIri ++



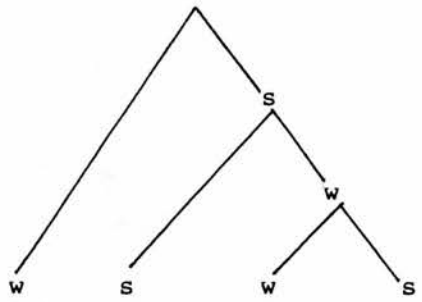
7 [NDIye mwenye NGUvu] +++



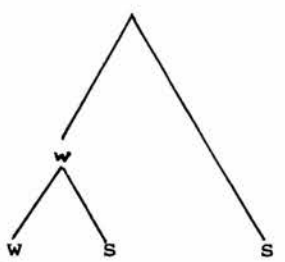
8 [uPEpo ukaanza kuVUma] +



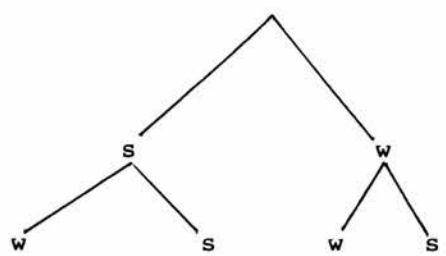
9 [MWIsho wa nguvu ZAke] +++



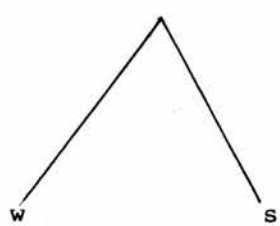
10 [lakini + KIla ukizidi kuVUma] ++



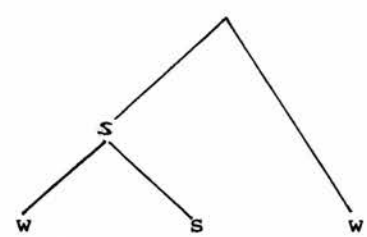
11 [ndio KWAnza msaFIri] +



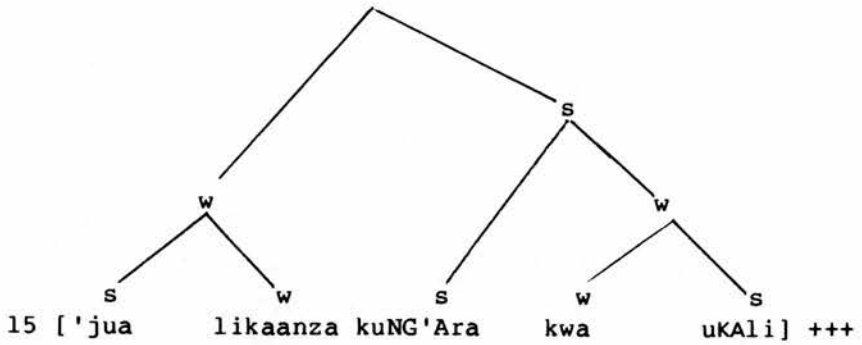
12 [huzidi kuliBAnza] [juba LAke] +++

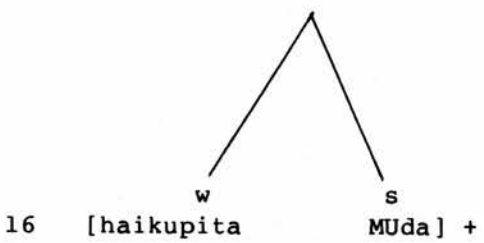


13 [hata mwiSHOwe] ++

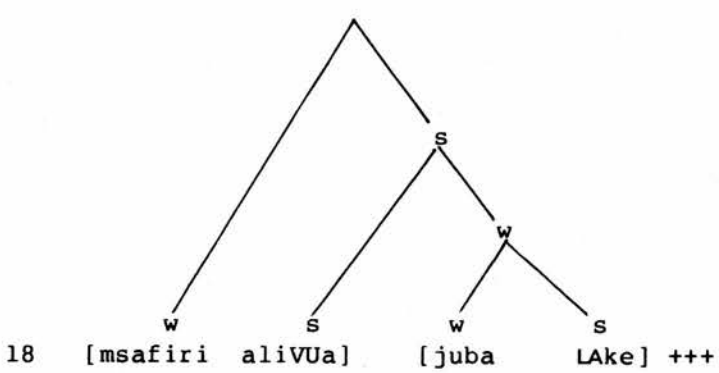


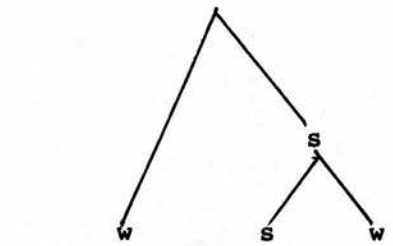
14 [uPEpo] [ukaKAta taMAa] +++


s
w
w
s
w
s
w
s
15 ['jua likaanza kuNG'Ara kwa uKAli] +++

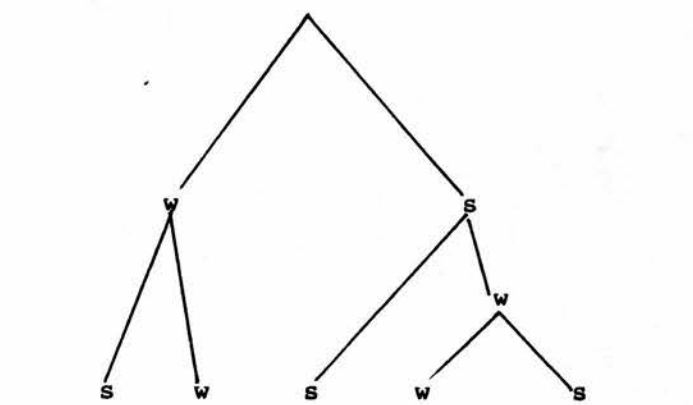

w
s
16 [haikupita MUda] +


s w
17 [MAra] +


s
w
w
s
w
s
18 [msafiri aliVUa] [juba LAke] +++



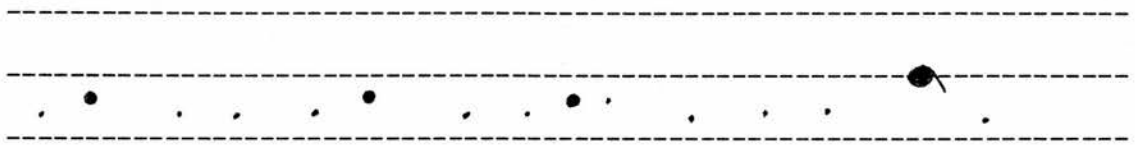
19 [upepo ukaKIri kuwa] +



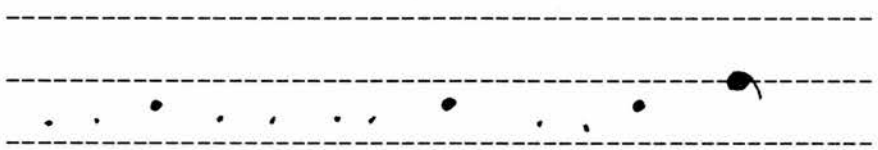
20 [JUa lina NGUvu] [kuliko YEye] +++

Appendix XI

The North wind and the Sun by native speakers: **NWSns**

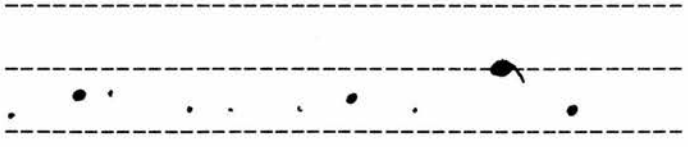


the 'north 'wind and the 'sun + were dis'puting which was the STRONGer ++

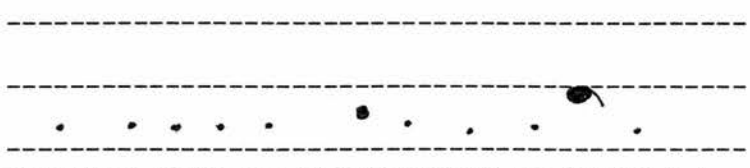


when a 'traveller came along 'wrapped in a 'warm CLOAK +++

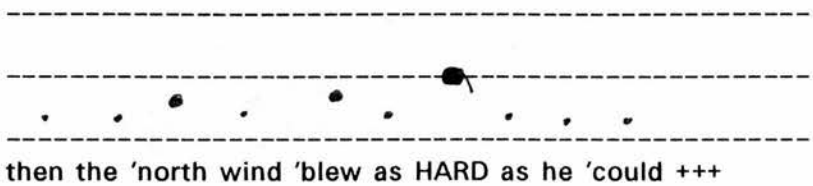
they aGREED that the 'one who 'first succeeded *



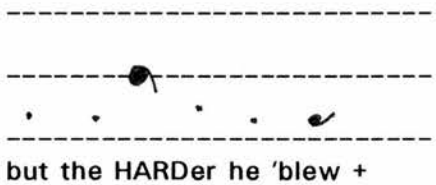
in 'making the traveller 'take his CLOAK 'off ++



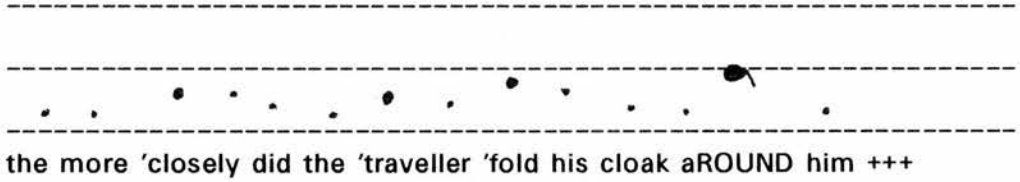
should be con'sidered 'stronger than the OTHer +++



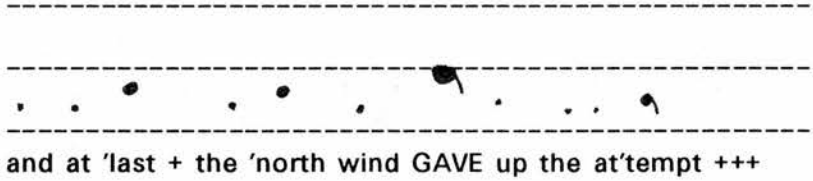
then the 'north wind 'blew as HARD as he 'could +++



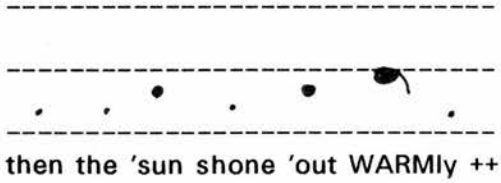
but the HARDer he 'blew +



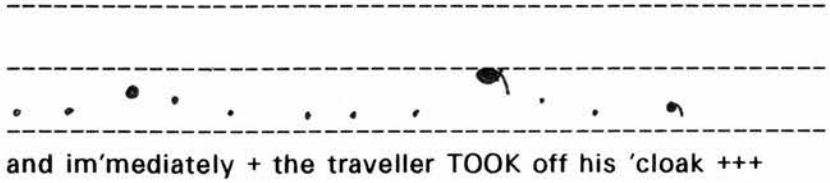
the more 'closely did the 'traveller 'fold his cloak aROUND him +++



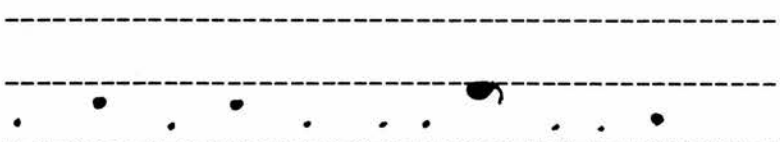
and at 'last + the 'north wind GAVE up the at'tempt +++



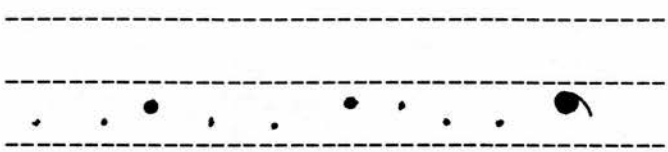
then the 'sun shone 'out WARMly +++



and im'mediately + the traveller TOOK off his 'cloak +++



and 'so + the 'north wind was obLIGED to con'fess ++



that the 'sun was the 'stronger of the TWO +++

Appendix XII

PHI Statistical Test Results for Tables in Chapter 4

The phi statistical test was used in trying to establish the significance of the correlation between the different variables involved in the Tables displayed in Chapter 4. The method used can be seen any good statistical text book. But, for the purposes of this study, reference is to be made Butler (1985:137 - 53). The calculation of the phi statistic involves the calculation of the *chi square* statistic.

The *phi coefficient* was then calculated. This was subsequently compared with the 'critical value in the chi square Table' (with 1 degree of freedom at the 0.05 or 5% level). If the phi coefficient was equal to or greater than the critical value in the chi square Table, the correlation between the two variables in question was judged to be significant (ie not a chance coincidence).

For some of the Tables in Chapter 4, there are two and in some others four separate tests. The reason for this is that in such Tables two or four sets of parameters are being considered. In Table 4, for example, the two sets of parameters concerned are that nuclear and minor prominence in NWStz may be domain final or nonfinal on the one hand, and they may be lexical or non-lexical on the other. In Table 11, the four sets of parameters considered by the statistical test are Fall-Rise nuclear tone; Fall-Rise tail tone; Fall-rise v Low tail tone; and Nuclear Tone v Tail Tone.

Table 1

	C1	C2	TOTAL
R1	6	1	7
R2	0	8	8
TOTAL	6	9	15

CHI-SQUARE= 11.4286

PHI= 0.8729

CHI-SQUARE= 8.1362

PHI= 0.7365

(YATES' CORRECTION APPLIED)

Phi coefficient (N x phi squared) = 11.43

Critical value in chi square Table = 3.84

Therefore, correlation is significant.

Table 2

	C1	C2	TOTAL
R1	6	0	6
R2	1	7	8
TOTAL	7	7	14

CHI-SQUARE= 10.5000

PHI= 0.8660

CHI-SQUARE= 7.2917

PHI= 0.7217

(YATES' CORRECTION APPLIED)

Phi coefficient (N x phi squared) = 10.50

Critical value in chi square Table = 3.84

Therefore, correlation is significant.

Table 3a

	C1	C2	TOTAL
R1	18	2	20
R2	3	4	7
TOTAL	21	6	27

CHI-SQUARE= 6.6673

PHI= 0.4969

CHI-SQUARE= 4.2188

PHI= 0.3953

(YATES' CORRECTION APPLIED)

Phi coefficient (N x phi squared) = 6.67

Critical value in chi square Table = 3.84

Therefore, correlation is significant.

Table 3b

	C1	C2	TOTAL
R1	17	39	56
R2	40	4	44
TOTAL	57	43	100

CHI-SQUARE= 36.8599

PHI= 0.6071

CHI-SQUARE= 34.4308

PHI= 0.5868

(YATES' CORRECTION APPLIED)

Phi coefficient (N x phi squared) = 36.86

Critical value in chi square Table = 3.84

Therefore, correlation is significant.

Table 4a

	C1	C2	TOTAL
R1	7	11	18
R2	13	14	27
TOTAL	20	25	45

CHI-SQUARE= 0.3750

PHI= 0.0913

CHI-SQUARE= 0.0938

PHI= 0.0456

(YATES' CORRECTION APPLIED)

Phi coefficient (N x phi squared) = 0.38

Critical value in chi square Table = 3.84

Therefore, correlation is not significant.

Table 4b

	C1	C2	TOTAL
R1	18	17	35
R2	2	8	10
TOTAL	20	25	45

CHI-SQUARE= 3.1114

PHI= 0.2630

CHI-SQUARE= 1.9688

PHI= 0.2092

(YATES' CORRECTION APPLIED)

Phi coefficient (N x chi squared) = 3.11

critical value in chi square Table = 3.84

Therefore, correlation is not significant.

Table 5

	C1	C2	TOTAL
R1	17	1	18
R2	12	7	19
TOTAL	29	8	37

CHI-SQUARE= 5.3389

PHI= 0.3799

CHI-SQUARE= 3.6524

PHI= 0.3142

(YATES' CORRECTION APPLIED)

Phi coefficient (N x phi squared) = 5.34

Critical value in chi square Table = 3.84

Therefore, correlation is significant.

Table 8a

	C1	C2	TOTAL
R1	20	24	44
R2	21	43	64
TOTAL	41	67	108

CHI-SQUARE= 1.7694

PHI= 0.1280

CHI-SQUARE= 1.2733

PHI= 0.1086

(YATES' CORRECTION APPLIED)

Phi coefficient (N x phi squared) = 1.77

Critical value in chi square Table = 3.84

Therefore, correlation is not significant.

Table 8b

	C1	C2	TOTAL
R1	21	43	64
R2	13	33	46
TOTAL	34	76	110

CHI-SQUARE= 0.2596

PHI= 0.0486

CHI-SQUARE= 0.0902

PHI= 0.0286

(YATES' CORRECTION APPLIED)

Phi coefficient (N x phi squared) = 5.35

Critical value in chi square Table = 3.84

Therefore, correlation is significant.

Table 11a

	C1	C2	TOTAL
R1	21	16	37
R2	0	5	5
TOTAL	21	21	42

CHI-SQUARE= 5.6757

PHI= 0.3676

CHI-SQUARE= 3.6324

PHI= 0.2941

(YATES' CORRECTION APPLIED)

Phi coefficient (N x phi squared) = 5.68

Critical value in chi square Table = 3.84

Therefore, correlation is significant.

Table 11b

	C1	C2	TOTAL
R1	21	23	44
R2	16	9	25
TOTAL	37	32	69

CHI-SQUARE= 1.6975

PHI= 0.1568

CHI-SQUARE= 1.1062

PHI= 0.1266

(YATES' CORRECTION APPLIED)

Phi coefficient (N x phi squared) = 1.70

Critical value in chi squared Table = 3.84

Therefore, correlation is not significant.

Table 11c

	C1	C2	TOTAL
R1	16	11	27
R2	5	0	5
TOTAL	21	11	32

CHI-SQUARE= 3.1041

PHI= 0.3115

CHI-SQUARE= 1.5608

PHI= 0.2208

(YATES' CORRECTION APPLIED)

Phi coefficient (N x phi squared) = 2.13

Critical value in chi square Table = 3.84

Therefore, correlation is not significant.

Table 11d

	C1	C2	TOTAL
R1	23	11	34
R2	9	10	19
TOTAL	32	21	53

CHI-SQUARE= 2.0952

PHI= 0.1988

CHI-SQUARE= 1.3332

PHI= 0.1586

(YATES' CORRECTION APPLIED)

Phi coefficient (N x phi squared) = 2.10

Critical value in chi square Table = 3.84

Therefore, correlation is not significant.

Table 12

	C1	C2	TOTAL
R1	16	4	20
R2	4	7	11
TOTAL	20	11	31

CHI-SQUARE= 5.9028

PHI= 0.4364

CHI-SQUARE= 4.1506

PHI= 0.3659

(YATES' CORRECTION APPLIED)

Phi coefficient (N x phi squared) = 5.90

Critical value in chi square Table = 3.84

Therefore, correlation is significant.

REFERENCES AND BIBLIOGRAPHY

Abe, I (1955) Intonation patterns of English and Japanese.
in Bolinger (ed) (1972), pp 337 - 347.

Abe, I (1957) On Japanese intonation.
Lingua. 7:183

Abe, I (1962) Call contours.
Proceedings of the 9th International
Congress of Phonetic Sciences. pp 519 - 23.
The Hague: Mouton.

Abercrombie, D (1952) Rhythm and stress in spoken English.
London Calling Europe. pp 232 - 233.
London: BBC.

Abercrombie, D; Fry, D B; P A D McCarthy; N C Scott &
J L M Trim (eds) (1964) In Honour of
Daniel Jones.
London: Longman.

Abercrombie, D (1964) A phonetician's view of verse structure.
in Phonetics in Linguistics. A Book
of Readings, London: Longman.
pp 6 - 13.
Jones, W E & Laver, J (eds).

Abercrombie, D (1968) Some functions of silent stress.
Work in Progress 2.
Department of Linguistics,
University of Edinburgh.

Abercrombie, D (1976) *Stress* and some other terms.
Work in Progress 9.
Department of Linguistics,
University of Edinburgh.

Akmajian, A (1979) Aspects of the Grammar of Focus in English.
London: Garland Publishing Inc.

Albrow, K H (1970) The Rhythm and Intonation of
Spoken English.
Programme in Linguistics and English
Teaching No. 9.
London: Department of General Linguistics
(UCL) and Longman Group Ltd.

Allerton, D J (1978) The notion *Givenness* and its relations

to proposition and theme.
Lingua. 44:133 - 168.

Allerton, D J & Cruttenden, A (1974) English sentence adverbials: their syntax and their intonation in British English.
Lingua, 1974, 34, 1, Aug., 1 - 29.

Allerton, D J & Cruttenden, A (1976) The intonation of medial and final sentence adverbials in British English.
Archivum Linguisticum 1976, 7, 1, April, 29 - 59.

Allerton, D J & Cruttenden, A (1979) Three reasons for accenting definite subjects.
Journal of Linguistics 15:49 - 53.

Anderson, R (1975) Tanzanian Students: Language and Educational Performance.
Unpublished Ph D thesis, Bristol University.

Anderson, S R (1985) Phonology in the Twentieth Century: Theories of Rules and Theories of Representations.
London: Univerisity of Chicago Press.

Armstrong, L E & Ward, I C (1926) Handbook of English Intonation.
Cambridge: Heffer.

Ashby, M G (1978) A study of two English nuclear tones.
Language and Speech, 21:32 - 6.

Ashton, E O (1944) Swahili Grammar: Including Intonation
London: Longman.

Austin, J L (1962) How to do Things with Words.
Oxford: Clarendon Press.

Babu, R A P (1980) Prosodic features in Indian English: stress, rhythm and intonation.
CIEFL Bulletin, 8 (2970 - 71), pp 33 - 39.
Hyderabad 500 007, India.

Bald, WLF-Dietrich (1976) Contrastive studies in English and German intonation: a survey.
Papers and Studies in Contrastive Linguistics, 1976, 4:37 - 47.

Barry, W J (1981) Prosodic features visited again.
Phonetica 38:320 - 340.

Bell, A (1977) Accent placement and perception of rhythm structures.
in Hyman, L M (ed) 1977.

Bing, J (1980) Aspects of English Prosody.
Bloomington, Indiana: IULC.

Birman, A & Szamosi, M (1972) Observations on sentential stress. Language, 48:304 - 325.

Bolinger, D L (1951) Intonation: levels versus configurations. Word, vol 7, no 3, pp 199 - 210. 1951.

Bolinger, D (1958) A theory of pitch accent in English. Word, 14:109 - 149.

Bolinger, D L (1958a) Intonation and grammar. Language Learning, 8:31 - 7.

Bolinger, D L (1961) Contrastive accent and contrastive stress. Language 37:83 - 96.

Bolinger, D L (1964) Intonation as a universal. in Bolinger (ed) 1972a.

Bolinger, D L (1964a) Around the edge of language: intonation. Harvard Educational Riview, vol 36, no 2, pp . 1964.

Bolinger, D L (1965) Pitch accent and sentence rhythm. Forms of English: Accent, Morpheme, Order. pp 139 - 180. Cambridge, MA: Harvard University Press.

Bolinger, D L (1970) Relative height. in D Bolinger (ed) 1970. Intonation. Harmondsworth: Penguin. pp 137 - 153.

Bolinger, D (1972) Accent is predictable (if you're a mind-reader). Language 48:633 - 44.

Bolinger, D (ed) (1972a) Intonation: Selected Readings. Penguin Books.

Bolinger, D L (1981) Two Kinds of Vowels, Two Kinds of Rhythm. Bloomington: Indiana University Linguistic Club.

Bolinger, D L (1982) Intonation and its parts. Language 58:505 - 533.

Bolinger, D (1985) Two views of accent. Journal of Linguistics, 21:79 - 123.

Bolinger, D L (1985a) Intonation and its Parts: Melody in Spoken English. Stanford, California: Stanford University Press.

Brazil, D C (1972) An Investigation of the Relationship Between Intonation and Grammar in the Reading Aloud of Citation Items.

M A Thesis.
University of Birmingham.

Brazil, D (1975) Discourse Intonation I.
Birmingham: English Language Research.
Birmingham University.

Brazil, D (1978) Discourse Intonation II.
Birmingham: English Language Research.
Birmingham University.

Brazil, D (1978a) An Investigation of Discourse Intonation.
SSRC Project HR3316/1.
Final Report 1978.

Brazil, D, Coulthard, M & Johns, C (1980) Discourse Intonation and Language Teaching.
London: Longman.

Breckenridge, J (1977) Declination as a phonological process.
Bell Laboratories Technical Memorandum.
Murray Hill. 1977.

Bresnan, J (1971) Sentence stress and syntactic transformations.
Language, 47:257 - 281.

Bresnan, J (1972) Stress and syntax: a reply.
Language, 48:326 - 342.

Brown, G (1977) Listening to Spoken English.
London: Longman.

Brown, G (1978) Understanding spoken language.
TESOL Quarterly, Vol. 12, no. 3,
1978. pp 271 - 283.

Brown, G (1983) Prosodic structure and the given/new distinction.
in A Cutler & D R Ladd (eds) 1983.
Intonation: Models and Measurements.

Brown, G, Currie, K L & Kenworthy, J (1980)
Questions of Intonation.
Baltimore: University Park Press.

Brown, G & Yule, G (1983) Discourse Analysis.
Cambridge: Cambridge University Press.

Brown, G & Yule, G (1983a) Teaching the Spoken Language.
Cambridge: Cambridge University Press.

Brown, P & Levinson, S (1978) Universals in language usage: politeness phenomena.
in E N Goody (ed). Questions and Politeness.
Cambridge: Cambridge University Press.

Burgess, G N (1973) Intonation patterns in Australian English.
Language and Speech 16, 1973, pp 314 - 326.

Butler, C (1985) Statistics in Linguistics.
Oxford: Basil Blakewell.

Butterworth, B (1980) Evidence from pauses in speech.
in Language Production I: Speech and
Talk.
Butterworth, ed. Academic Press. pp 155 - 76.

Butterworth, B (ed) (1980) Language Production I: Speech and Talk.
London: Academic Press.

Chafe, W L (1970) Meaning and the Structure of Language.
Chicago: Chicago University Press.

Chafe, W L (1974) Language and consciousness.
Language, 50:111 - 33.

Chafe, W L (1976) Givenness, contrastiveness, definiteness,
subjects, topics and points of view.
in C Li (ed). Subject and Topic.
pp 25 - 55.I
New York: Academic Press.

Chafe, W L (1979) Some reasons for hesitating.
in Dechert & Raupach 1979.

Chomsky, N (1969) Deep structure, surface structure,
and semantic interpretations.
IULC.
Reprinted in: N Chomsky (1972) Studies on
Semantics in Generative
Grammar.
The Hague.

Chomsky, N & Halle, M (1968) The Sound Pattern of
English.
London: Harper & Row.

Cohen, A & Hart, J 't (1967) On the anatomy of intonation.
Lingua, 19:177 - 192.

Cohen, A & Hart, J t' (1970) Comparison of Dutch and English
intonation contours in spoken news bulletins.
IPO Annual Progress Report, 5:78 - 82.

Cohen, A, Collier, R & Hart, J t' (1982) Declination:
construct or intrinsic feature
of speech.
Phonetica, 39:254 - 273.

Coleman, H O (1914) Intonation and emphasis.
Miscellanea Phonetica, I, 1914. pp 6 - 26.

Collier, R (1975) Perceptual and linguistic tolerance

in intonation.
International Review of Applied Linguistics.
13:293 - 308.

Collier, R (1975a) Physiological correlates of intonation patterns.
Journal of the Acoustic Society of America
58:249 - 255.

Cooper, G & Meyer, L (1971) The Rhythmic Structure of Music.
Unversity of Chicago Press.

Cooper, W E & Paccia-Cooper, J (1980) Syntax and Speech.
Cambridge, Mass.: Harvard University Press.

Cooper, W E & Sorensen, J M (1977) Fundamental frequency contours at syntactic boundaries.
Journal of the Acoustical Society of America,
62:682 - 692.

Cooper, W E & Sorensen, J M (1981) Fundamental Frequency in Sentence Production.
Berlin: Springer-Verlag.

Coulthard, M (1977) An Introduction to Discourse Analysis.
London: Longman.

Coulthard, M & Brazil, D (1979) Exchange Structure.
Discourse Analysis Monographs 5,
English Language Research: Birmingham.

Couper-Kuhlen, E (1986) An Introduction to English Prosody.
London: Edward Arnold.

Cruttenden, A (1981) Falls and rises: meaning and universals.
Journal of Linguistics 17:77 - 91.

Cruttenden, A (1986) Intonation.
Cambridge Textbooks in Linguistics.
Cambridge: Cambridge University Press.

Crystal, D (1966) Studies in the Prosodic Features of Educated Spoken British English, with Special Reference to Intonation.
Ph D thesis, University of London.

Crystal, D (1969) Prosodic Systems and Intonation in English.
London: Cambridge University Press.

Crystal, D (1975) The English Tone of Voice.
London: Arnold.

Crystal, D (ed) (1980) A First Dictionary of Linguistics and Phonetics. London: Andre' Deutsch.

Crystal, D & Quirk, R (1964) Systems of Prosodic and Paralinguistic Features in English. The Hague: Mouton.

Crystal, D & Davy, D (1969) Investigating English Style. London: Longman.

Crystal, D & Davy, D (1975) Advanced Conversational English. London: Longman.

Currie, K L (1978) Recent investigations in intonation. Work in Progress 11. Department of Linguistics. University of Edinburgh.

Currie, K L (1979) Contour system in one variety of Scottish English. Language and Speech 1979.

Currie, K L (1980) An initial *search for tonics*. Language and Speech, 23:329 - 50.

Currie, K L (1981) Further experiments in the *search for tonics*. Language and Speech, 24:1 - 28.

Currie, K L & Kenworthy, J (1977) The difficulties of intonation analysis. Work in Progress 10. Department of Linguistics. University of Edinburgh.

Cutler, A (1977) The context-dependence of *intonational meanings*. Papers from the 13th Regional Meeting of the Chicago Linguistic Society. pp 104 - 15.

Cutler, A (1980) Errors of stress and intonation. in V A Fromkin (ed). Errors in Linguistic Performance. New York: Academic Press.

Cutler, A (1983) Speaker's conceptions of the functions of prosody. in A Cutler & D R Ladd (eds) 1983. Intonation: Models and Measurements.

Cutler, A & Ladd, D R (1983): Intonation: Models and Measurements. Berling: Springer Verlag.

Danes, F (1960) Sentence intonation from a functional view. Word. 16:34 - 54.

Danes, F (1964) A three-level approach to syntax.
Travaux Linguistique de Prague. 1:225 - 240.

Danes, F (1970) One instance of Prague School Methodology:
functional analysis of utterance text.
in Gavin (1970), pp 132 - 164.

Dechert, H W & Raupach, M (eds) (1979) Temporal Variables
in Speech: Studies in Honour of Frieda
Goldman-Eisler.
The Hague: Mouton.

Delattre, P (1963) Comparing the prosodic features of
English, German, Spanish, and French.
International Review of Applied Linguistics,
1:193 - 210.

Denes, P (1959) A preliminary investigation of certain
aspects of intonation.
Language and Speech. 2:106 - 122. 1959.

Denes, P & Milton-Williams, J (1962) Further studies
in intonation.
Language and Speech. 5:1 - 14.

Edmondson, W (1981) Spoken Discourse: a Model for Analysis.
London: Longman.

Edmondson, W J (1978) Context and stress - the "Old" and
the "New".
in Foreign Language Teaching, Anglistic
und Englischunterricht, 6:63 - 73.

Firbas, J (1974) Some aspects of the Czechoslovak approach
to the problem of functional sentence perspective.
in F Danes (ed). Papers in Functional Sentence
Perspective.
Prague: Academia.

Firbas, J (1979) Post-intonation-centre prosodic shade
in modern English clause.
in Greenbaum, S, Leech, G, & Svartvik, J (eds)
Studies in English Linguistics for Randolph
Quirk.
London: Longman. pp 125 - 133.

Fox, A (1973) Tone-sequences in English.
Archivum Linguisticum, 1973, 4:17 - 26.

Fries, C C (1964) On the intonation of Yes-No questions
in English.
D Abercrombie, D B Fry, P A D McCarthy,
N C Scott & J L M Trim (eds) In Honour of
Daniel Jones.

London: Longman 1964.

Fromkin, V (1978) Tone: A Linguistic Survey.
New York: Academic Press.

Fry, D B (1955) Duration and intensity as physical
correlates of linguistic stress.
Journal of the Acoustical Society of America.
27:765 - 768.

Fuchs, A (1984) *Deaccenting* and *default accent*
in Gibbon, D & Richter, H (eds),
Intonation, Accent and Rhythm: Studies in
Discourse Phonology.
Berlin:Hidelberg. pp 134 - 164.

Garding, E (1979) Sentence intonation in Swedish.
Phonetica, 36:207 - 215.

Garding, E (1981) Contrastive prosody: a model and its
application.
Studia Linguistica, 35:146 - 165.

Gavin, P L (ed) (1970) Method and Theory in Linguistics.
The Hague: Mouton.

Gibbon, D (1976) Perspectives on intonation analysis.
Bern: Lang (Forum Linguisticum, vol 9).

Gibbon, D & Richter, H (eds) (1984) Intonation, Accent
and Rhythm: Studies in Discourse Phonology.
Berlin: Walter de Gruyter.

Giegerich, H J (1983) On English sentence stress and the
nature of metrical structure.
Journal of Linguistics, VI, 19, No. 1,
March 1983, pp 1 - 28.

Gimson, A C (1980) An Introduction to the Pronunciation
of English.
London: Arnold. Third Edition.

Glenn, M G (1977) Pragmatic functions of intonation.
Ann arbor: Xerox, University Microfilms.

Gold, B & Rabiner, L (1969) Parallel processing techniques
for estimating pitch periods in the time
domain.
JASA, 46:442 - 8.

Goldsmith, J (1976) An overview of autosegmental phonology.

Linguistic Analysis, 2:23 - 68.

Goldsmith, J (1976a) Autosegmental Phonology.
Bloomington: Inidiana. IULC.

Goldsmith, J (1982) Review of Ladd (1980).
Language, 262:422 - 4.

Goody, E N (ed) (1978) Questions and Politeness.
Cambridge: Cambridge University Press.

Grice, G J (1979) Presupposition and Conversational
Implicature.
in P Coe (ed) 1981. Radical Pragmatics.
pp
New York: Academic Press.

Grimes, J E (1975) The Thread of Discourse.
The Hague: Mouton.

Grosjean, F & Collins, M (1979) Breathing, pausing
and reading.
Phonetica, 36:98 - 114.

Grosz, G J (1979) Focusing in dialog.
American Journal of Computational Linguistics.
Fiche 79:96 - 103.

Grosz, G J (1981) Focusing and description in natural language
dialog.
in A K Joshi, B L Webber & I A Sag (eds) 1981,
Elements of Discourse Understanding.
Cambridge: Cambridge University Press.

Grundt, A W (1977) Syntactic accent in Norwegian morphology.
in L M Hyman (ed). Studies in Stress
Accent.
Southern California Occasional Papers
in Linguistics 4.

Gunter, R (1972) Intonation and relevance.
in Bolinger (1972) Intonation.
pp 194 - 215.

Gunter, R (1982) Review of Ladd (1980).
Language in Society, 11:297 - 307.

Gussenhoven, C (1982) Stresses: are they there when you
hear them?
Work in Progress 15.
Department of Linguistics.
University of Edinburgh.

Gussenhoven, C (1983) Focus, mode and the nucleus.
Journal of Linguistics, 19:377 - 417.

Gussenhoven, C (1984) On the Syntax and Semantics of Sentence Accents. Dordrecht: Foris Publications.

Gussenhoven, C (1985) Two views of accent: a reply. Journal of Linguistics, 21:125 - 138.

Halle, M & Vergnaud (1982) On the framework of autosegmental phonology. in H van der Hulst & N Smith (eds), The Structure of Phonological Representations. Dordrecht: Foris. pp 55 - 82.

Halliday, M A K (1963) The tones of English. Archivum Linguisticum, XV 1963, pp 1 - 28.

Halliday, M A K (1964) Intonation in English grammar. Transactions of the Philological Society, 1964. pp 143 - 169.

Halliday, M A K (1966) Intonation system in English. Patterns of Language: papers in general, Descriptive and applied linguistics, A MacIntosh & M A K Halliday (eds). London: Longmans. pp 111 - 33.

Halliday, M A K (1967) Intonation and Grammar in Bitish English.

Halliday, M A K (1967b) Notes on transitivity and theme in in English: Part II. Journal of Linguistics, 3:199 - 244.

Halliday, M A K (1970) A Course in Spoken English: Intonation. London: Oxford University Press.

Halliday, M A K (1985) An Introduction to Functional Grammar. London: Edward Arnold.

Hammerich, L L; Jakobson, R & Zwirner, E (eds) (1971) Form and Substance: Phonetic and Linguistic Papers Presented to Eli Fischer-Jorgensen. Akademisk Forlag.

Hart, J t' (1967) On the anatomy of intonation. Lingua, 19:177 - 92.

Hart, J t' & Cohen, A (1973) Intonation by Rule: a perceptual quest. Journal of Phonetics, 1, 1973, pp 309 - 327.

Hart, J t' & Collier, R (1975) Integrating different levels of intonation analysis. Journal of Phonetics, 3:235 - 55.

Hirst, D J (1974) An approach to the integration of

intonation into the syntactic description of English.
Linguistics, 121:45 - 55. Feb. 1974.

Hirst, D (1983) Structures and categories in prosodic representation.
in A Cutler & D R Ladd (eds) 1983, Intonation: Models and Measurements.

Holmes, J N; Mattingly, I G & Shearme, J N (1964) Speech synthesis by rule.
Language and Speech, 7:127 - 39.

Householder, F (1957) Accent, juncture, intonation and my grandfather's reader.
Word, 13:234 -45.

Hudson, R A (1958) The meaning of questions.
Language, 51, no. 1, (1959). pp 1 - 31.

Hultzen, L S (1959) Grammatical intonation.
in Abercrombie et al (eds). In Honour of Daniel Jones.

Hultzen, L S (1959a) Information points in intonation.
Phonetica, IV 1959, pp 107 - 120.

Hyman, L N (ed) (1977) Studies in Stress and Accent.
Southern California Occasional Papers in Linguistics, No. 4.
Department of Linguistics,
University of Southern California,
Los Angeles.

International Phonetic Association (1949) The Principles of the International Phonetic Association.
London: University College.

Jackendoff, R S (1972) Semantic Interpretation in Generative Phonology.
Cambridge, MA: MIT Press.

Jarman, E & Cruttenden, A (1976) Belfast intonation and the myth of the fall.
Journal of the International Phonetics Association, 6, 1, June. pp 4 - 12.

Jones, D (1956) The Pronunciation of English.
Cambridge: Cambridge University Press.

Jones, D (1980) An Outline of English Pronunciation.
9th Edition.
Cambridge: Cambridge University Press.

Jones, W E & Laver, J (eds) (1973) Phonetics in Linguistics. A Book of Readings. London: Longman.

Johns-Lewis, C (ed) (1986) Intonation in Discourse. London: Croom Helm.

Kenworthy, J (1977) The intonation of questions in one variety of Scottish English. Work in Progress 10, 1977.

Kenworthy, J (1978) The intonation of questions in one variety of Scottish English. Lingua, 44:267 - 82.

Kingdon, R (1958) Groundwork of English Intonation. London: Longmans.

Kiparsky, P (1975) Stress, syntax and meter. Language, 51:576 - 616.

Ladd, D R (1972) English compound stress. in Gibbon, D & Richter, H (eds) (1984), pp 253 - 266.

Ladd, D R (1977) The function of the A-rise accent in English. IULC. Bloomington: Indiana.

Ladd, D R (1978) Stylized intonation. Language 54:517 - 540.

Ladd, D R (1980) The Structure of Intonational Meaning: Evidence from English. Bloomington: Indiana University Press.

Ladd, D R (1980a) Intonation, main clause phenomena, and points of view. in Waugh & van Schooneveld (eds) (1980). pp 149 - 163.

Ladd, D R (1981) On intonational universals. T Myers, J Laver & J Anderson (eds) 1981. pp 389 - 400. Amsterdam: North Holland Publishing Co.

Ladd, D R (1982) Review of Brown et al (1980). Language, 58:204 - 8.

Ladd, D R (1983) Even, focus and normal stress. Journal of Semantics, vol 2, no 2. pp 157 - 170.

Ladd, D R (1983a) Levels v configurations revisited. in Essays in Honour of C F Hockett. F B Agard, G Kelly, A Makkai & V B

Makkai (eds) 1983.
Leiden: E J Brill.

Ladd, D R (1983b) Peak features and overall slope.
A Cutler & D R Ladd (eds) 1983.
Intonation: Models and Measurements.
Berlin: Springer-Verlag.

Ladefoged, P & Mackinney, N P (1963) Vocal effort,
intensity and loudness.
Journal of the Acoustic Society of
America. 35:454 -60.

Lakoff, G (1972) The global nature of the Nuclear
Stress Rule.
Language 48:285 - 303.

Laver, J & Jones, W E (eds) (1965) Studies in Phonetics and
Linguistics. A Book of Readings.
Oxford University Press.

Laver, J (1980) The Phonetic Description of Voice Quality.
London: Cambridge University Press.

Leben, W R (1976) The tones in English intonation.
Linguistic Analysis, 2:69 - 107.

Lee, W R (1956) Some features of the intonation of
questions.
English Language Teaching, 10:66 - 70.

Lee, W R (1956a) Fall-rise intonations in English.
English Studies, 37:62 - 72.

Lee, W R (1956b) English intonation: a new approach.
Lingua, vol 5, no 4, 1956. pp 345 - 371.

Lee, W R (1960) An English Intonation Reader.
London: Macmillan.

Lehiste, I (1970) Suprasegmentals.
Cambridge, MA: MIT Press.

Lehiste, I (1977) Isochrony revisited.
Journal of Phonetics. 5:253 - 263.

Lehiste, I & Peterson, G E (1968) Some basic
considerations in the analysis of
intonation.
in D B Fry (ed). Acoustic Phonetics:
A Course of Basic Readings.

Liberman, M (1975) The Intonation System of English.
MIT Dissertation.

Liberman, M & Sag, I (1974) Prosodic form and
discourse function.

Papers from the 10th Regional
Meeting of the Chicago Linguistic
Society. pp 416 - 27.

Liberman, M & Prince, A (1977) On stress and linguistic
rhythm.
Linguistic Inquiry. 8:249 - 336.

Lieberman, P (1965) On the acoustic basis of the perception
of intonation by linguists.
Word, 21:40 - 54.

Lieberman, P (1967) Intonation, Perception and Language.
Cambridge, MA: MIT Press.

Lyons, J (1979) Deixis and anaphora.
in T Myers (ed). The Development of
Conversation and Discourse.
Edinburgh: Edinburgh University Press.

Mattingly, I (1966) Synthesis by rule of prosodic features.
Language and Speech, 9:1 - 13.

Maw, J (1969) Sentences in Swahili.
London: SOAS.

Maw, J E M (1974) Tone groups and clause structure
in Swahili.
Bulletin of the School of Oriental and
African Strudies. XXXVII. pp 137 - 147.

Maw, J & Kelly, J (1975) Intonation in Swahili.
London: SOAS.

McCawley, J D (1979) Presupposition and discourse structure.
in C K Oh & D Dinnen (eds). Syntax and
Semantics Vol II: Presupposition.
New York: Academic Press.

Myachina, E N (1981) The Swahili Language.
Languages of Asia and Africa, Vol 1.
Translation by G L Campbell.

Myers, T (ed) (1979). The Development of Conversation
and Discourse.
Edinburgh: Edinburgh Uniersity Press.

Myers, T; Laver, J & Anderson, J (eds) (1981) The
Cognitive Interpretation of Speech.
Amsterdam: North Holland Publishing Co.

Nespor, M & Vogel, I (1983) Prosodic structure
above the word.
in A Cutler & D R Ladd (eds) 1983,
Intonation: Models and Measurments.

Newman, S S (1946) On the stress system of English.
Word, 2:171 - 187.

Nooteboom, S G & Kruyt, J G (1981) Accentuation of news bulletins.
Journal of the Acoustical Society of America, 70; Supplement 1, s40 R8.

Nooteboom, S; Kruyt, T & Terken, J (1981) What speakers and listeners do with pitch accents: some explorations.
in Th. Fretheim (ed). Nordic Prosody II.
Tapir, Trondheim. pp 9 - 32.

Nooteboom, S G & Terken, J M B (1982) What makes people omit pitch accents: an experiment.
Phonetica, 39:317 - 36.

Oakeshott, J (1984) Factuality and intonation.
Journal of Linguistics.
Vol 20, No 1, March 1984, pp 1 - 21.

O'Connor, J D (1973) Phonetics.
Harmondsworth: Penguin Books.

O'Connor, J D & Arnold, G F (1961) Intonation of Colloquial English.
London: Longman.

Odo, C (1972) Focusing and defocusing in Hawaiian English.
Working Papers in Linguistics, 1972, 4, 8.
University of Hawaii.

Oh, C K & Dinnen, D A (eds) (1979) Syntax and Semantics Volume II: Presupposition.
New York: Academic Press.

Ohala, J J (1978) The Production of Tone.
Report of the Phonology Laboratory, no. 2, pp 63 - 116.
University of California, Berkeley, 1978.

Owen, E (1980) Intonation and meaning.
Journal of Psycholinguistic Research, 9:23 - 39.

Pakosz, M (1981) Prosodic introduction of thematic expressions in English.
Linguistics, 19:969 - 86.

Pakosz, M (1982) Intonation and attitude.
Lingua, 56:153 - 78.

Palmer, H E (1922) English Intonation with Systematic Exercises.
Cambridge: Heffer.

Pellowe, J & Jones, V (1978) On intonational variability in Tyneside speech. in P Trudgill (ed). Sociolinguistic Patterns in British English. London: Arnold.

Peterson, G E & Lehiste, I (1960) Duration of syllable nuclei in English. Journal of the Acoustical Society of America, 32:693 - 703.

Pierrehumbert, J (1979) The perception of fundamental frequency declination. Journal of the Acoustical Society of America. 66:363 - 369.

Pierrehumbert, J (1980) The Phonology and Phonetics of English Intonation. MIT Dissertation.

Pike, K L (1945) The Intonation of American English. Michigan: University of Michigan Press.

Pike, K L (1975) On the grammar of intonation. Bibliotheca Phonetica, 1975, 11:33 - 44. Norman: Summer Institute of Linguistics. Oaklahoma University.

Polome', E C (1967) Swahili Language Handbook. Washington: Center for Applied Linguistics.

Prince, E F (1979) Towards a taxonomy of the Given/New distinction. in Cole, P (ed). Radical Pragmatics. London: Longman.

Prince, M (1983) Relating to the grid. Linguistic Inquiry, 14:19 - 100.

Quirk, R (1968) On scales of contrast in connected English speech. in Essays on the English Language: Medieval and Modern. London: Longman. 136 - 147.

Quirk, R; Svartvik, J; Duckworth, A P; Rusiecki, J P L & Colin, A K T (1964) Studies in the correspondence of prosodic to grammatical features in English. Proceedings of the 9th Congress of Linguistic Sciences (Boston 1962). Essays in the English Language: Medieval and Modern. pp 101 - 122. London: Longman.

Quirk, R; Greenbaum, S; Leech, G & Svartvik, J (1972) A Grammar of Contemporary English. London: Longman.

Rees, M & Urguhart, A H (1976) Intonation as a guide to readers' structuring of prose texts. Work in Progress, 9. Department of Linguistics. University of Edinburgh.

Roach, P (1982) On the distinction between 'stress-timed' and 'syllable-timed' languages. in D Crystal (ed). Linguistic Controversies, pp 73 - 79.

Roach, P (1983) English Phonetics & Phonology: a Practical Course. Cambridge: Cambridge University Press.

Sag, I & Liberman, M (1975) The intonational disambiguation of indirect speech acts. Papers from the 11th Regional Meeting of the Chicago Linguistic Society. pp 487 - 97.

Schmerling, S (1974) A re-examination of *normal stress*. Language, 50:66 - 73. 1974.

Schmerling, S F (1976) Aspects of English Sentence Stress. Austin: Texas University Press.

Schubiger, M (1956) Again: fall-rise intonations in English. English Studies, 37:157 - 60.

Schubiger, M (1958) English Intonation: Its Form and Function. Tubingen: Max Niemeyer.

Schubiger, M (1965) English intonation and German modal particles: a comparative study. Phonetica, 12:65 - 84.

Schubiger, M (1980) English intonation and German modal particles II: a comparative study. in Waugh & van Schooneveld (1980). pp 279 - 98.

Searle, J R (1969) Speech Acts. Cambridge: Cambridge University Press.

Sharp, A E (1958) Falling-rising intonation patterns in English. Phonetica, 2:127 - 52.

Steele, J (1775) An Essay Towards Establishing the Melody and Measure of Speech, to be Expressed and Perpetuated by Certain Symbols. London: Bowyer and Nichols. 2nd Edition (enlarged) 1779, entitled Prosodia Rationalis.

Steinberg, D & Jakobovits, L (eds) (1971) An Interdisciplinary Reader in Philosophy,

Linguistics and Psychology.
Cambridge: Cambridge University Press.

Stevens, S S & Volkman, J (1940) The relation of pitch to frequency: a revised scale.
The American Journal of Psychology, vol. 53, no. 3 (1940), pp 329 - 53.

Stockwell, R (1960) The role of intonation in a generative grammar of English.
Language, Vol 36, no 3, pp 360 - 367.

Thompson, H S (1980) Stress and Salience in English: Theory and Practice.
Xerox.
Palo Alto Research Centre.

Trager, E C (1941) The theory of accentual systems.
Language, Culture and Personality.
Essays in Memory of E Sapir.
I Spier et al (eds). pp 131 - 45.
Wisconsin: Menasha.

Trager, G (1951) An Outline of English Structure.
Norman, Oklahoma: Battenburg Press.

Trager, G L & Smith, H L (1957) Outline of English Structure.
Washington: American Council of Learned Societies. (Revised Edition)

Trager, G L & Smith Jr, H L (1964) The Intonation System of American English.
in D Abercrombie et al (eds) (1964).
In Honour of Daniel Jones.
London: Longman.

Tregidgo, P S (1981) Focus and counter-focus.
IATEFL Newsletter, 70:46 - 52.

Tucker, A N & Ashton, E O (1942) Swahili phonetics.
African Studies, Vol 1, 1942.
pp 77 - 103; 161 - 182.

Uldall, E (1964) Dimensions of meaning in intonation.
in D Abercrombie, D B Fry, P A D McCarthy, N C Scott & J L M Trim (eds). In Honour of Daniel Jones.
London: Longman.

Uldall, E T (1971) Isochronous stresses in RP.
in Hammerich et al (eds). Form and Substance.

Uldall, E T (1971) Isochronous stress in RP.
in L L Hammerich, Roman Jakobson &

E Zwirner (eds). Form and Substance: Phonetics and Linguistic Papers Presented to Eli Fischer-Jorgensen, 1971. pp 205 - 210.

Uldall, E T (1982) A footnote on intonation and attitudes. Work in Progress 15:26. Department of Linguistics. University of Edinburgh.

Vachek, J (1966) The Linguistic School of Prague. Bloomington: Indiana University Press.

Vanderslice, R & Ladefoged, P (1972) Binary suprasegmental features and transformational word-accentuation rules. Language, 48:819 - 38.

van Dijk, T A (1977) Text and Context. London: Longman.

Ward, I C (1945 [1929]) The Phonetics of English. Cambridge: Heffer.

Watkins, M H (1958) Swahili phonology, with special emphasis on intonation. Monograph Series in Language and Linguistics, 11:25 - 42. 1958. Georgetown University.

Waugh, L R & van Schooneveld (eds) (1980) The Melody of Language. Baltimore: University Park Press.

Wekentyne, H J (1972) Eliciting intonation patterns. American Speech, 1972, 47, 3 - 4, Fall - Winter. pp 188 - 194.

Wells, R S (1945) The pitch phonemes in English. Language, 21:27 - 39.

Widdowson, H G (1979) Rules and procedures in discourse analysis. in T Myers (ed). The Development of Conversation and Discourse.

Widdowson, H G (1980) Conceptual and communicative functions in discourse. Journal of Applied Linguistics, 1:234 - 43.

Wilensky, R (1978) Understanding Goal-Based Stories. New Haven: Computer Science Research Report 140. Yale Unversity.

Willems, N J (1982) English Intonation from the Dutch Point of View.

Dordrecht: Foris.

Yule, G (1979) Intonation and ambiguity.
The Intonation of Scottish English.
SSRC Report HR361. 1979.

Yule, G (1980) The functions of phonological prominence.
Archivum Linguisticum, IX:31 - 46.